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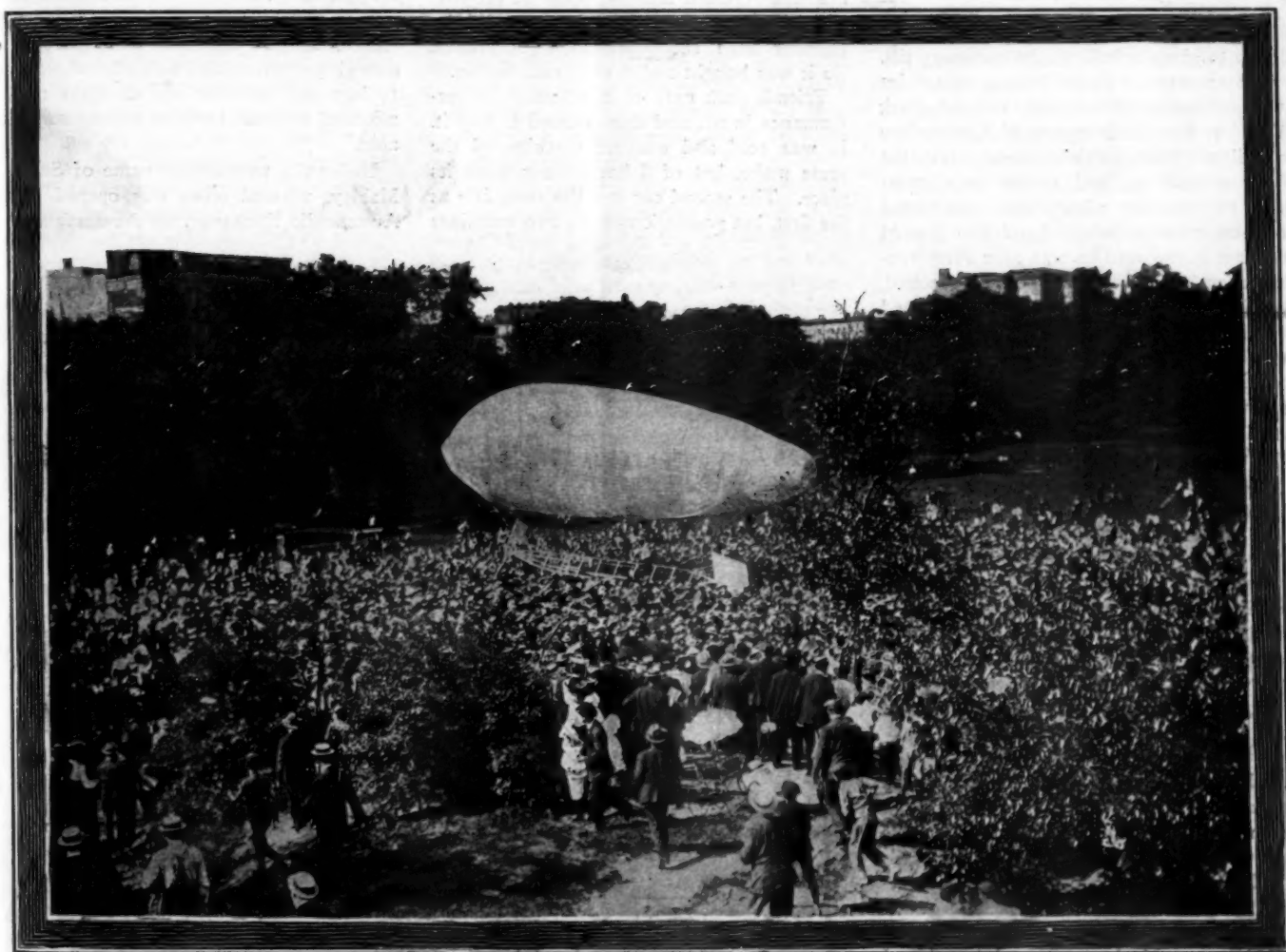
No. 9

A NEW FIELD FOR THE MOTOR BUILDER.

FROM automobiles to airships may be rather a long step, so far as practicality is concerned, and doubtless it will be some time before the first models of air-cars are offered for sale. Public in-

"voyage" on Wednesday, August 23, and for a time went mad on the subject of aerial navigation. Streets were blocked and the inhabitants fell all over themselves and each other in getting a view of the soaring ma-

work, carrying a home-made, air-cooled gasoline motor which developed the power to turn the propellor, which was rigged in the "bow." The operator sat inside the framework and held in his hands the ropes



ROY KNABENSHUE ALIGHTING IN CENTRAL PARK, NEW YORK, IN HIS DIRIGIBLE BALLOON AFTER A SUCCESSFUL FLIGHT.

terest, however, can be aroused by an airship more quickly, it would seem, than by almost any other mode of transportation. New York City saw a successful airship

chine. The flight was made by Roy Knabenshue in an airship of the Santos-Dumont type—a long, narrow, pointed balloon under which was slung a light frame-

work for the manipulation of the rudder, which was hung at the "stern." When it was desired to cause the machine to point upward or downward when in flight, the aeronaut



Dirigible Balloon High Up in the Air Above the House. Balloon is in Upper Right Hand Corner of Photograph.

shifted his position forward or aft sufficiently to give the balloon the necessary tilt.

The ascent was made from a vacant lot at Sixty-second street and Central Park West. It was the intention of Knabenshue to sail to Twenty-third street, circle the Flatiron building, and return to a point near the starting place; but unexpected cross-currents in the air drove him toward the East River until he was over First avenue when Twenty-third street was reached. An elevation of nearly a mile was attained at this point. The return trip was made against a five or six mile breeze, and the machine was steered, with apparent ease, to an open space in Central Park, where it was landed gently on the grass. The time required to make the trip was approximately three-quarters of an hour. While in the air Knabenshue made his craft swing circles and go through other movements to show how completely it was in his control. It was noticed when the balloon returned that it had lost some of its buoyancy by the escape of gas from the big bag. This did not seem to interfere in any way with the return trip, however. The air-cooled motor worked well throughout the journey and gave the operator no trouble.

When making a fine adjustment with a nut and jamnut, it will usually be found that when the jamnut is tightened down the first nut will move forward slightly. This should be allowed for in making the adjustment.

British automobile journals are great at jumping at conclusions. One of them heard something about a rural freak who fired a shot from a revolver at the tires of an automobile, and at once printed a paragraph stating that the New York police had been ordered to puncture the tires of speeding automobiles with bullets.

The Story of a Quick Business Success in the Automobile Field.

SIX or seven years ago a young man on the Consolidated Exchange in New York who had some money to spend in amusement, conceived the idea that he could get a large measure of fun out of an automobile. He was not a mechanical man, and had not studied engineering, so he called to his aid in selecting a machine his brother-in-law, a young man who had attained his majority only a year or so before but who had given up a position with the New York Telephone Company to engage in the electrical contracting business on his own account. He was interested in mechanics and of course had a good knowledge of electrical work.

Together they considered one car and another—there were not many different makes in those days—and finally became especially interested in a 6-horsepower Panhard-Levassor. Careful examination of this French machine revealed the excellence of the material and workmanship in it, and the younger man recommended its purchase. So it was bought and it gave satisfaction.

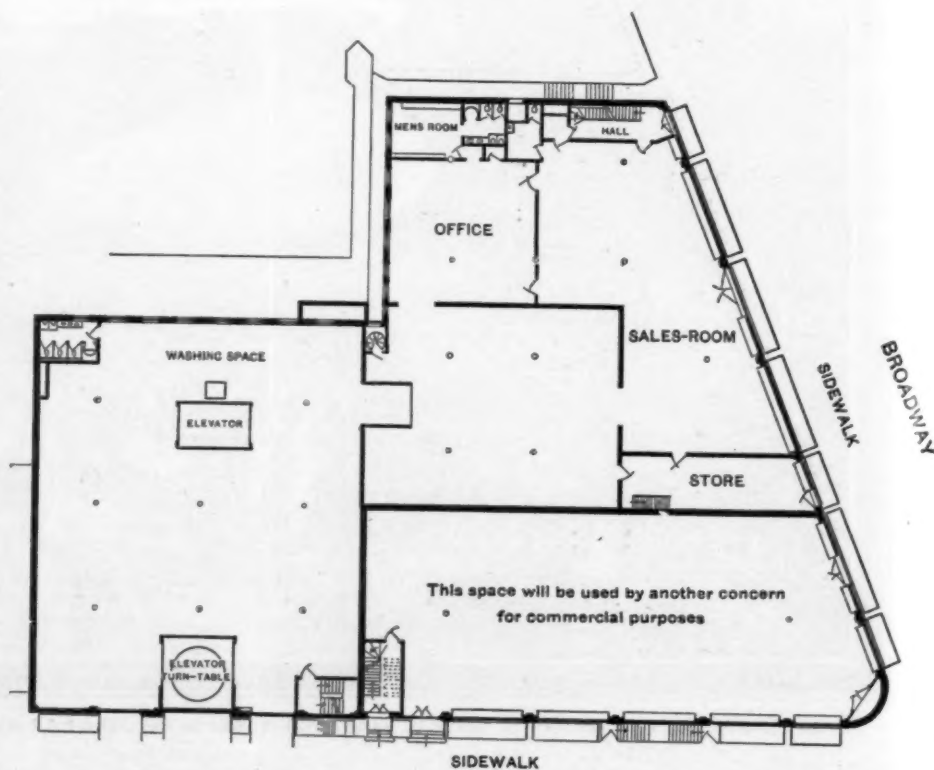
Friends took note of it, watched its performance in use and then wanted to buy it. It was sold and another machine of the same make, but of 8 horsepower, took its place. The second car met the same fate as the first, but possession of the two machines

had awakened a desire in both young men to learn why the French machines were better and so much higher priced than cars then made in this country, and what special conditions were responsible for the difference.

As the elder of the two wanted to get a new car to replace the last one sold, the younger one went to Paris to make a selection, as at that time no one was dealing in French cars in New York city. When he got there, he found that the manufacture and use of automobiles was already well established in the French capital, where the work of designing and building them was being undertaken as a serious engineering problem and that the best obtainable material and workmen were employed.

Several new cars were bought, and upon returning home arrangements were made to open an office for the sale and storage of foreign cars in New York, as, despite a widespread prejudice against foreign machines, it was believed that there were enough persons on this side who would want to buy and use the best cars the market afforded to make such an enterprise profitable.

Under the partnership name of Smith & Mabley, a small office was opened in the Automobile Exchange, on the north side of



56th STREET
GROUND PLAN OF THE NEW SMITH & MABLEY SALESROOM AND GARAGE IN NEW YORK.

Thirty-eighth street, between Broadway and Seventh avenue, and arrangements were made with the Exchange management for the storage and care of cars owned by their patrons. The elder member of the firm was A. D. Proctor Smith and the younger Clinton R. Mabley. Mr. Smith took charge of the outside work and the sales, while Mr. Mabley took care of the inside management.

The Automobile Exchange was then handling several American cars, such as the Winton and Stearns. It was about the only sales and storage station in the city, and its availability decided the location for the new firm—in fact, this was practically the beginning of the Thirty-eighth street "automobile row" that grew up later and all but monopolized the block on that street between Broadway and Seventh avenue.

That was five years ago. With the starting of the new enterprise an order was placed in Paris for a considerable number of cars to be delivered the following year, as the French firms were unable to promise deliveries any earlier. In a very short time it was seen that better facilities would be needed for properly taking care of customers' cars, and a bold move was made in leasing the old building on Seventh avenue near Thirty-eighth street that comprises part of the establishment now occupied. This building had a frontage of 50 feet on the avenue and a depth of 100 feet. When it was opened the firm had only four or five cars to put in it, and many among the trade thought the partners were rash to the point of lunacy in undertaking a burden of such magnitude for the sale and care of cars of foreign make exclusively. Predictions were freely made of an early failure and of the need of coming to other dealers to secure financial help.

The introduction of French cars into America was uphill work at first, according to Mr. Mabley. Everything seemed against them; the manufacturers and dealers, the trade papers and the majority of the public, could not be convinced that cars could be built any better abroad than at home, and it was the hardest kind of work to talk a \$7,000 or \$8,000 proposition to a man who was used to considering cars at \$1,500. Nearly everybody was skeptical, but the few early buyers were well satisfied and not only bought new cars from time to time, but interested their friends and these became customers.

To the policy of giving complete satisfaction to their customers, even at an occasional loss to themselves, Mr. Mabley attributes in large measure the success of the firm. Other elements in its growth were the quality of the cars handled and extensive advertising. Old customers have been retained from the beginning, and some have bought as many as ten and twelve cars. As the best advertisement is a satisfied customer, it was obviously the best business policy to please patrons.

Prejudice against foreign machines finally wore away, as Americans going abroad began touring in automobiles and returned



BUILDING THAT IS SAID TO BE THE LARGEST AUTO SALESROOM IN THE WORLD.

home with accounts of the pleasure enjoyed. At first very few of the tourists brought their cars to America upon their return, owing to the heavy import duty, but later, when it was shown that foreign cars were adapted for use on American roads, they brought them in and began doing some touring in their own country.

The duty does not offer so much of a bar now as formerly, for a man who paid from \$3,000 to \$4,000 for a car was more likely to balk at paying an additional 45 per cent. than a man who bought a car costing \$10,000 to \$20,000, and the cost of machines has increased in proportion with the power of the engine. Most of the cars imported now are of 24 horsepower or more.

In the winter of 1901-2 the firm engaged space at the automobile show in Madison Square Garden and exhibited three Panhard cars, an 8, a 10 and a 12-horsepower. The 12-horsepower machine created great wonder, being looked upon as a monster machine for ordinary use. The show gave new impetus to the business and the new garage quickly filled up.

The repair department grew apace, and as new machinery was installed the partners began experimenting in the building of high-class cars after the French type. But it was impossible to get first-class mechanics who were capable of doing the work right, and even more difficult to get the proper materials.

Despite the difficulties encountered, from six to a dozen cars were completed during each of the succeeding three years. These were not offered to the public, but were kept by members of the firm for personal use and by others closely connected with the business to be tested, and it was not until last year that the first S. & M. Simplex cars were brought out publicly, and the Smith & Mabley Manufacturing Company was fully launched in a factory on the East side.

Meantime, the regular business of the firm continued to expand so that a little more than three years ago the partnership was reorganized into a stock company and the adjoining building on the corner of Seventh avenue and Thirty-eighth street was leased and remodeled into an up-to-date auto salesroom, as it stands to-day. Most of the stock was retained by Messrs. Smith & Mabley, and the other shares were taken by men working in the business with the principals.

Another year saw the storage limit of the establishment, even with the new addition, practically reached, and the company decided to increase its facilities again, and in such a way as to provide for the growth for years to come. This proved to be a harder matter than was anticipated.

Attempts were made to lease adjoining property that was used as lumber yards and livery stables, but it was impossible to do so, and as there was no plot of land on the block sufficiently large for the purpose, the company sought and finally found a location further up-town, on Broadway at the north-west corner of Fifty-sixth street.

The site, which has been occupied by a collection of decrepit old houses, was particularly advantageous for the business of the company, owing to its proximity to the best residential part of the city, to the park and transportation lines, the broad streets and lighter traffic.

The owners of the plot agreed to erect an immense building especially adapted for garage purposes, and Smith & Mabley, now incorporated, agreed to take a ten-year lease of the building, with option of renewal. Work was begun last spring, and now there is nearing completion there an automobile establishment which, it is said, will be not only the largest in New York City, but anywhere in the world, Paris not excepted. In another month it is expected that the com-

pany will be comfortably housed in its new quarters. The accompanying engraving from a photograph taken last Thursday shows the present stage of construction, and work is being rushed on the building inside and out.

Every feature of construction of the new building and its equipment that is suggested by years of experience in selling, storing and caring for automobiles of the most costly types has been employed or provided for. The construction is of expensive character, of fireproof materials, substantial and permanent. It is to be ornamental enough to be an improvement to the character of that part of Broadway in which it is located, and parts of the interior are to be attractively decorated and well furnished.

That a building of such size and character should be erected on a plot on the busy main thoroughfare of the largest city in the country, where frontage is so expensive, is indicative of the faith in the permanency of the business that is entertained by Smith & Mabley, with their intimate knowledge of the present status of it, and by the parties who are erecting the building for them.

Such rapid expansion of the retailing business as is shown by the need of a building of this size and character by one concern is in reality a better index of the growth and stability of the automobile business than is the enlargement of manufacturing plants, for the former represents the steady increase of the actual sales of cars and of their constant use by the owners. It is evident that money would not be invested in establishments of this character unless the financiers felt assured of the permanency and continued growth of the business, for a building designed and built for a garage is not adapted to use for other purposes, especially in such a location.

However, Smith & Mabley feel that they are not venturing upon any uncertain undertaking, but are simply keeping pace with the development of all modern forms of transportation and regard the expansion of their facilities only as a good business move. The seriousness of the problem of the storage and proper care of cars has increased with every additional car handled.

The new garage will be centrally located in a wealthy residential quarter of the city, close to the Boulevard and to Central Park, in the great hotel and theatre section, convenient to the underground, elevated and surface car lines, and within a few short blocks of the new home of the Automobile Club of America.

The new building is four stories in height, with a front of 160 feet on Broadway and 210 feet on Fifty-sixth street. It is of irregular shape, as the building line of Broadway meets that of Fifty-sixth street at an acute angle, and a large rectangle about 60 by 90 feet in the northwest corner is occupied by a corner of the Rutland Hotel. The part of the building that is directly on the corner, fronting on the two streets and cut off from the rest of the structure by fire walls, will

not be occupied by Smith & Mabley, but will be used by another concern for commercial purposes.

The four floors of the part to be devoted to automobile purposes comprise 76,000 square feet. The street walls of the structure are of buff brick trimmed with terra cotta, with ample windows for lighting the interior. The floors are of concrete supported by iron columns and steel girders, making the entire construction fireproof. The offices and salesrooms are cut off by fire walls and fire doors from the garage proper, where machines are kept in "live" storage. As each of the four floors is to be used for the storage of cars, there will be accommodation for from 400 to 450 cars. Every detail of construction and equipment will comply with the regulations of the Board of Fire Underwriters and the City Bureau of Combustibles. Thus danger of fire will be reduced to the minimum and insurance premiums on building and machines kept as low as possible.

A novel but very simple device for simplifying the maneuvering of cars into position inside of the building is an original idea with the firm. It is a combination of elevator and turntable. The large car "lift," directly in front of the Fifty-sixth street entrance, is fitted with a turntable 17 feet in diameter, and on each of the floors there are three wire gates 8 feet wide opening from the elevator. A car can be run through the entrance onto the elevator, raised to any floor desired, then turned in any direction on the turntable before being rolled into its final resting place. This greatly lessens the liability to damage of the radiator, lamps and body by contact with other cars and pillars and also diminishes the time necessary to take a car into or out of the building. The elevator itself is 19 feet square, probably the largest in the city. As each floor is in effect a separate garage in itself, with individual washing stands, gasoline and compressed air supply, lockers, telephones and teleautograph service, a car will need very little shifting about after being brought into the building.

The plan of the main floor is shown in the accompanying line engraving. The upper floors are much the same in arrangement, except that the space occupied on the first floor by offices and salesrooms will be used in part by a chauffeurs' room, and stockrooms for parts and supplies and for patterns, jigs and tools. An exceptionally large and varied stock of extra parts for both foreign and domestic machines is carried by the firm, and with the assortment of patterns, tools, jigs and fixtures constantly kept on hand, it is possible to duplicate intricate parts of almost any description at short notice. The machine shop, of which this stockroom is an adjunct, will be located on the top floor over the Fifty-sixth street end, and will have a complete up-to-date equipment of machine and hand tools and every facility for executing difficult repairs. Owning to the high class of cars handled and the instructive value of working on them, the

best class of mechanics is attracted to the shop.

As shown in the plan, entrance to the office of the establishment is on the Broadway front, at the extreme northeast corner of the building. This admits to a passenger elevator communicating with the upper floors and also by stairway to the rooms and shops on the upper floors. Opening off from the office are waiting rooms for men and women patrons, which will be well furnished. There will be ample provision for removing dust and grease after a long ride, the men's lavatory being fitted even with shower baths. There will be a separate waiting room for the chauffeurs on the second floor, and on the roof will be a sort of summer garden where they may spend idle moments in comfort on summer evenings.

The salesroom has a frontage on Broadway of 80 feet and a maximum width of 40 feet. The office, which is separated from it by a wood and glass partition, is 35 feet square. The storage room back of the salesroom and office is 50 feet square, and the garage proper has a length of 100 feet and is 80 feet wide. At the rear or north end of the garage are the washing stands, occupying a space about 18 by 60 feet. In front of this space is the rear freight elevator, measuring 10 by 17 feet, and directly back of it a tire sink for washing tires. To the left of the washing stands is a closed room with iron door where the gasoline is drawn for filling the tanks. Hot water as well as cold will be piped to the washing stands. One of the elevators gives access to the roof, so that cars may be taken out into the light for photographing or inspection.

There will be a storage department for electric vehicles, with the necessary charging facilities, and with men in charge who are familiar with storage batteries.

One of the garage floors will probably be reserved for the storage of cars owned by persons who do not employ chauffeurs. Here the owners will be able to tinker with their machines as much as they like, without the unpleasant feeling of being watched by "professional" mechanics.

The new establishment represents an investment of between \$450,000 and \$500,000 for the entire building, exclusive of the land. The company will employ from eighty to one hundred workmen. Thus has developed in a few years out of an almost insignificant beginning, an enterprise that requires the use of a capital of from \$800,000 to \$1,000,000 for the annual turnover, the sales of cars for the present year being estimated by Mr. Mabley at from 175 to 200, and the average price of the machines between \$5,000 and \$6,000.

A French dealer supplies paper garments for automobilists and others, the idea being borrowed from the Japanese. A special paper, very light and strong, is used, and can be purchased by the yard. Capes, socks, belts, knee caps and pajamas are among the articles made from paper.

Explanation of the Differential Gear.

THE precise action of a differential gear is a matter which many autoists honestly admit they do not clearly understand, but if the relative movements of the gear wheels are carefully followed it will be seen that the problem presents but little difficulty, says a writer in *The Autocar*.

At all events it is an interesting mechanism, and well worth a little investigation.

The main object of the differential or balance gear is to enable the driving wheels of the car to revolve at different speeds when it is not traveling in a direct straight line.

It is evident that if the car is moving in

ment is that should one wheel be running on a slippery surface and the other on a dry, the former will transmit more power than the latter, the extra amount being wasted by the skidding of this wheel which meets the least resistance.

Fig. 1 shows a transverse section of a differential case as fitted to a car driven by propeller shaft.

A is the outer casing, *B*₁ and *B*₂ the two separate axles, to the outer ends of which the driving wheels of the car are fixed. *C* is the large bevel wheel, and *D* its pinion, which transmits the power from the cardan shaft to the back axles *B*₁ *B*₂.

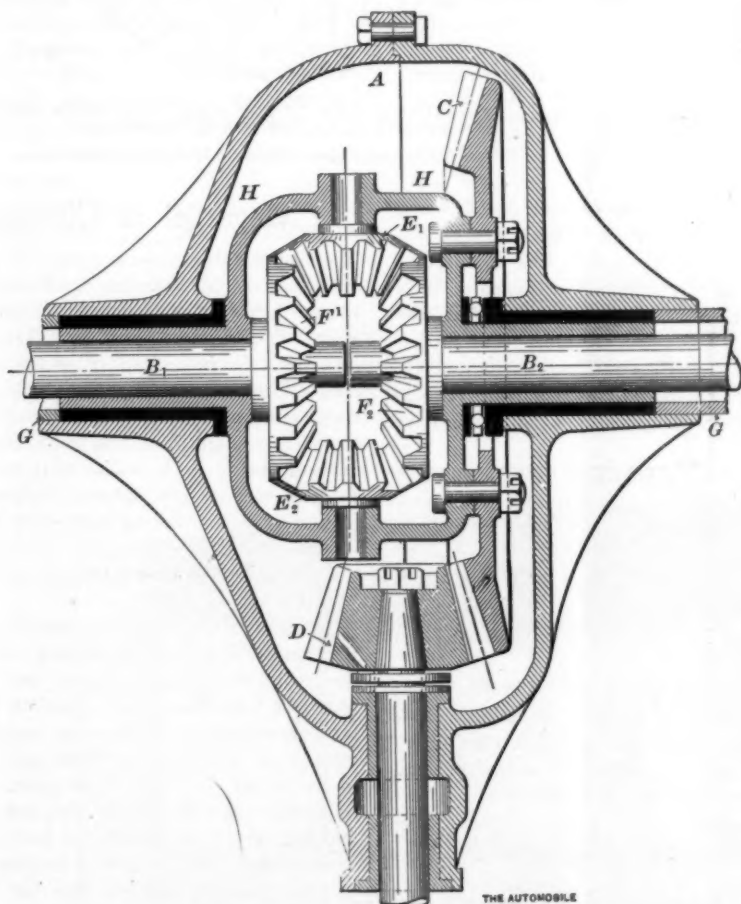


FIG. 1.—PLAN VIEW PARTLY IN SECTION OF BEVEL GEAR DIFFERENTIAL.

A, outer casing
*B*₁, back axle
*B*₂, back axle

C, large bevel
D, bevel, pinion
*E*₁ *E*₂, differential pinions

*F*₁ *F*₂, differential bevels
G *G*, sleeves forming axle
H *H*, differential case

a circle the outer wheels are required to revolve faster than the inner ones, and in the case of the driving wheels must continue to transmit the power maintained by the engine. As the front wheels are quite independent of each other, the required difference of speed in their case is a natural automatic result.

All types of differentials now in use work automatically, enabling the wheel which meets the least resistance to travel faster than the other, and also transmit the greater portion of power available.

One of the disadvantages of this arrange-

H H are the casings of the actual differential box, made in two pieces and bolted together. This case is securely bolted to the large bevel wheel *C*, and moves round with it as a whole.

The sides of the differential case are extended to form bearings for the axles, as shown, since a certain amount of relative motion takes place between the case and the axles *B*₁ *B*₂.

Inside the differential case are four small bevel pinions (only two shown), *E*₁ *E*₂, mounted on spindles, and free to turn in bearings, which are part of the case *H*, as

shown. These pinions are in gear with the two larger bevel wheels *F*₁ and *F*₂, the latter being fitted to the squared ends of the axles *B*₁ *B*₂.

One pinion would be sufficient to illustrate the working of the gear; four are fitted to minimize the stress to which the teeth of one would be subjected, as the power is transmitted through the teeth of these pinions. *G G* are the tubes forming the external axle sleeve to which the wheel springs are fitted.

Now, if the car is moving in a straight line with the wheel resistances equal, the drive is transmitted through the pinions *E*₁ *E*₂, etc., equally to the bevel wheels *F*₁ *F*₂, and no relative motion takes place between them, the whole mass revolving solidly with the differential case *H H* and the large bevel *C*, so that if *C* were fixed direct to one axle the resulting motion of the car would be the same.

But directly one road wheel meets a slightly greater resistance than the other, relative motion between the bevel gearing inside *H H* takes place, and one axle moves with a greater angular velocity than the other.

To follow these motions clearly, suppose the car to be standing with one back wheel jacked up and free to turn, the other wheel and axle being locked. Let *B*₁ be the fixed axle.

If now the large bevel wheel *C* (and with it the case *H H*) be turned through one revolution it will be found that the axle *B*₂ will complete two revolutions, irrespective of the ratio of *E*₁ to *F*₁.

For since the case *H H* has completed one turn the pinions *E*₁ *E*₂, etc., with their spindles have been moved bodily in a circle. Suppose these pinions were not in gear with *F*₁ (which is fixed), but were still in gear with *F*₂, but prevented from turning on their spindles, then for one revolution of *H H* *B*₂ would complete one revolution also.

But since the pinions are in gear with *F*₁ they are forced to turn on their spindles, and in so doing drive *F*₂ through one revolution. The two motions result in axle *B*₂ with its road wheel completing two revolutions when the other axle is fixed. In this way the respective velocities of the road wheels are automatically differentiated between the limits of an equal velocity (when meeting equal resistances), and a velocity twice as great as this when one wheel is not moving.

It should be noticed that when the pinions *E*₁ *E*₂, etc., are turned with case *H* through one revolution they complete n turns on their spindles (n being the ratio $\frac{E_1}{F_1}$) which drives *F*₂ through $\frac{n}{n}$, that is, one revolution.

Another prevailing type of differential gear is shown in Fig. 2, where spur wheels are used instead of bevel wheels. Fig. 3 shows an end view of the same, with one-half of case *H* removed.

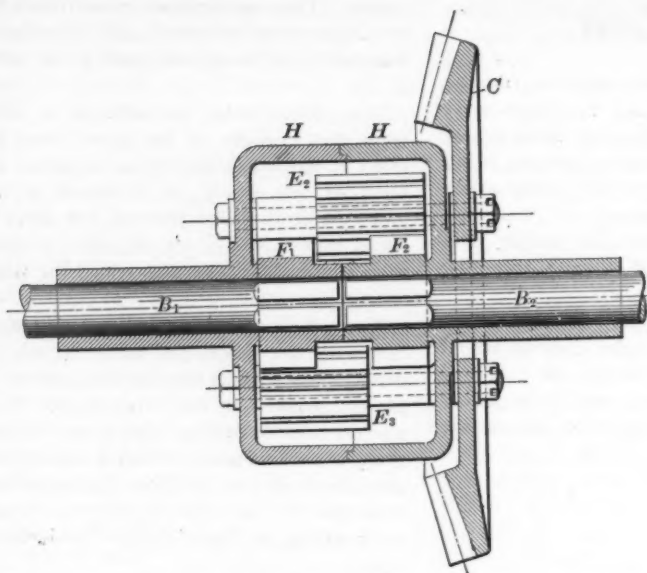


FIG. 2.—SECTION IN PLAN THROUGH SPUR GEAR DIFFERENTIAL CASING.

B₁, back axle. B₂, back axle. C, large bevel. E₁ E₂ E₃ E₄, star pinions.

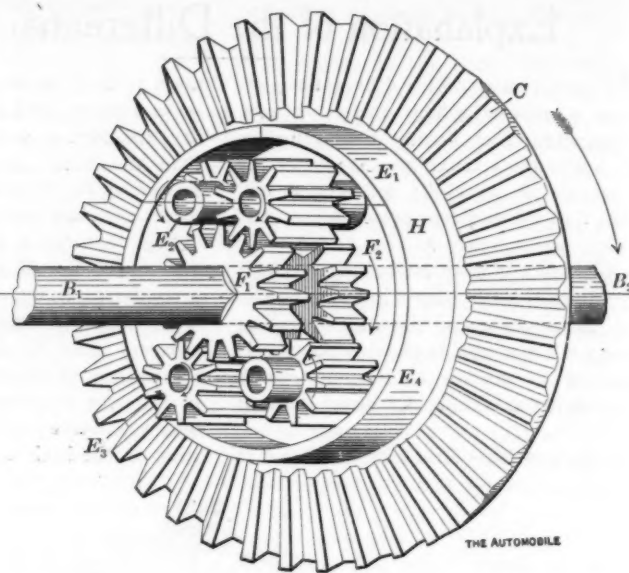


FIG. 3.—PERSPECTIVE VIEW OF THE SAME GEAR WITH THE DIFFERENTIAL CASING PARTLY REMOVED.

F₁ F₂, differential spur wheels. H H, differential case.

The arrangement consists of a modification of an epicyclic train of wheels, and its working is in every way analogous to the gear just described.

C is the large bevel wheel fixed, as before, to the differential case H H. F₁ and F₂ are spur wheels of equal diameter fixed to the squared ends of the two axles B₁ and B₂ respectively.

The four star pinions (of equal diameters) E₁ E₂ E₃ and E₄ are free to turn on their spindles, which are shown as the bolts holding the wheel C and the case H H together. The pinions are of smaller diameter than F₁ and F₂, but the faces of their teeth are longer than those of F₁ and F₂, allowing E₁ and E₂ to be in gear, while at the same time E₁ is in gear with F₁ only, and E₂ in gear with F₂ only.

Two pairs of pinions are usually fitted to this gearing, sometimes three, to insure greater strength.

One pair, however, is sufficient to follow the motion of the gear.

Suppose as before that B₁ and F₁ are fixed and B₂ with F₂ free to turn, and that the wheel C with the case H H are turned through one revolution. Let R be the ratio of the number of teeth in F₁ to the number of teeth in E₁ or E₂, which is always greater than one. The directions of the wheels are indicated in Fig. 3.

Since F₁ is fixed E₁ will roll round it, and E₁'s motion relative to its spindle will be R revolutions. But E₁ has also been turned bodily in a circle, since its spindle is fixed to H H, which has completed one revolution. Therefore E₁ makes $1 + R$ revolutions in same direction as the wheel C, which we will call positive.

E₂ being in gear with E₁ and having the same number of teeth, will have turned R revolutions also, but in the opposite (negative) direction, but will also have moved bodily through one revolution in the posi-

tive direction, owing to its spindle being fixed to the case H H. The resultant motion of E₂ with respect to any fixed point in its plane of revolution is therefore $1 - R$ turn. It is interesting to note that if E₁ and F₁ were of the same diameter, then R, being equal to 1, E₂ would not revolve at all, relative to earth, but describe one revolution relative to its spindle in a negative direction.

We now come finally to F₂, which is free to turn, and is in gear with E₂. We have seen that the latter makes R revolutions in

a negative direction, and so drives F₂ — R

revolutions in a positive direction, viz., one positive turn.

But E₂ has also been moved bodily round in a circle in a positive direction. This motion also gives one complete turn to F₂, whose total movement is therefore two revolutions in a positive direction.

This result holds good whatever the value of R may be, since B₂ always makes R

$1 + -$ revolutions (which, of course, is R

equal to two) when B₁ is fixed.

It is evident that if both road wheels are jacked up and one is turned by hand, the other will turn with an equal velocity in the opposite direction, the wheel C and case H H remaining at rest.

When a chain-driven car is run with only one chain driving, it is, of course, necessary to lock the idle sprocket and its axle; otherwise the differential case will be driven round without transmitting any motion to the free axle.

Notwithstanding the low price of horses in Argentina, the employment of automobiles is continuously extending in the city of Buenos Ayres.

Megargel at Chicago.

Special Correspondence.

CHICAGO, Aug. 26.—The *Reo Mountaineer*, the 16-horsepower touring car in which Percy F. Megargel, of the Buffalo Automobile Club, and David Fassetto, of Lansing, Mich., are making the double transcontinental automobile trip, arrived here at 6 o'clock to-night, escorted by several members of the C. A. C. The start was made from New York last Saturday morning, the *Reo Mountaineer* taking eight days in which to reach Chicago.

In speaking about his 1,000-mile trip, Mr. Megargel said:

"We have not had any trouble on the road from New York to Chicago, and with the exception of one rainy day the weather has been excellent. One thing in particular I have noticed on this my fourth automobile trip between New York and Chicago in two years, and that is the great increase in touring. Do you know that not a single day has passed in which we have not encountered at least a score of touring parties on the road or stopping for the night at some one of the wayside hotels? On former trips I have occasionally passed a lone tourist, or possibly passed two or three parties a week, but now you meet many every day.

From Chicago the route lies through Illinois, Iowa, Nebraska, Wyoming, Idaho and Oregon. On the return trip to the East the route will be through Oregon, California, Nevada, Colorado, Kansas, Missouri, Kentucky, West Virginia, Maryland, Delaware and New York. Mr. Megargel expects to leave Chicago Monday morning.

An automobile was the center of attraction on our streets recently. Mrs. Loader's niece from Junction City came up in it. One little boy yelled: "A thing going without a head."—*Clay Center Dispatch*.

The Atlas Gasoline Commercial Truck.

ONE of the most serious attempts yet made in America to build self-propelled gasoline commercial vehicles for heavy work, after careful scientific study of the problem, is represented in the first specimens of the product of the Knox Motor Truck Company, of Springfield, Mass., which has just begun to place its new vehicles in the market. Organized last December by Harry A. Knox for the sole purpose of manufacturing automobiles for business purposes, this new concern has built and equipped a new factory especially for the work and has constructed and tested several experimental trucks before feeling satisfied to stake its reputation on trucks delivered to customers.

These first new trucks are called the Atlas, Model A, and are designated two-ton wagons; a larger model, to be known as Model B and designated a three-ton truck, is soon to follow, having the same power plant and transmission but larger running gear and body.

At the very start it was recognized that the construction of motor vehicles that would not only do heavy trucking successfully but do it economically year after year without incurring prohibitively heavy expenses for repairs and replacements, presented an altogether different problem from that of the pleasure automobile. Construction that was excellently suited for carrying

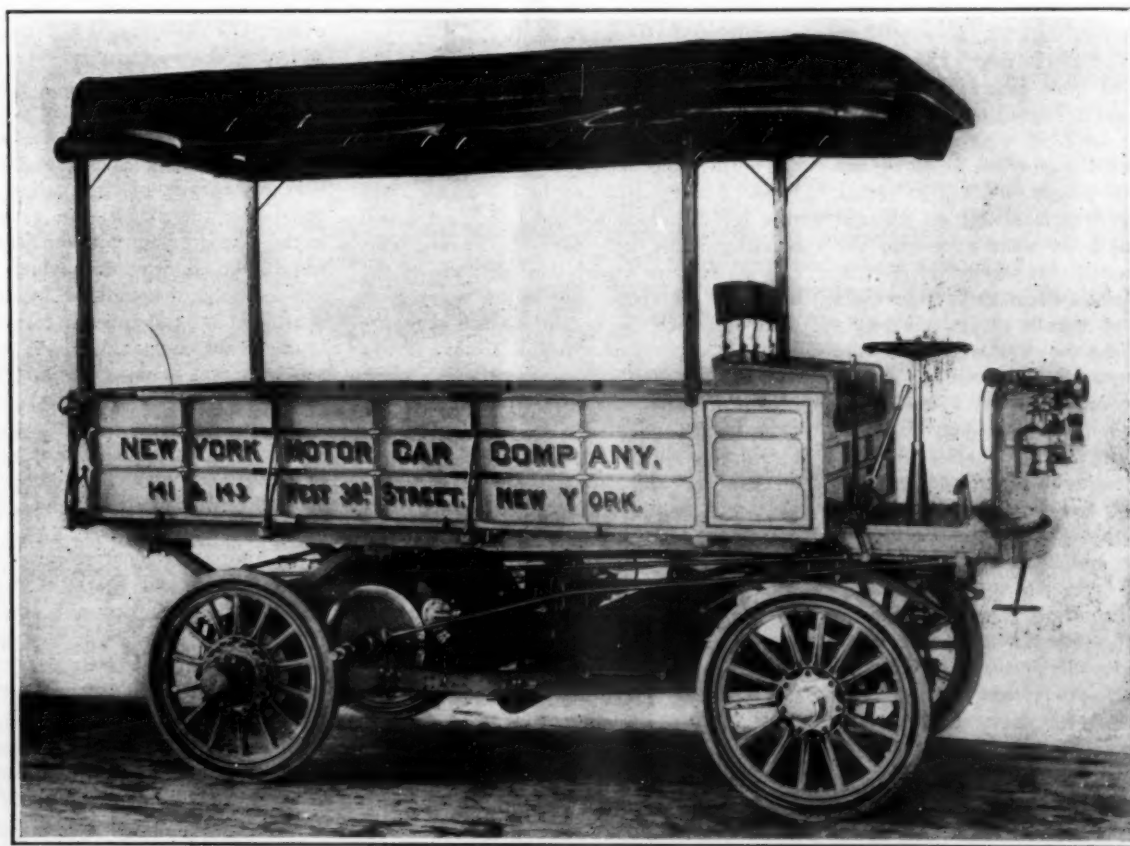
four or five persons, weighing at most, with luggage, a scant 1,000 pounds, over good roads on large pneumatic tires, was ill adapted to withstand the severe service of transporting loads varying from a few pounds to 4,000 or 5,000 pounds on solid tires over all kinds of roads and paving in all sorts of weather. Strength of horse-drawn trucks built for equivalent loads was in no wise indicative, since forces and stresses set up by reaction when the wheels met obstructions at a speed rarely in excess of four miles an hour were multiplied many fold when the speed was doubled or tripled, and the horse presented a flexible factor in itself that absorbed shocks as if it were composed of a complicated system of springs, where the momentum of a heavy flywheel turned continuously by a necessarily very powerful engine presented a constant and practically irresistible force to drive the wheels undeviatingly and at undiminished speed over all inequalities and obstructions of the road surface.

Therefore the problem was attacked along lines that dismissed the accepted practice in pleasure car building out of mind; frank acknowledgment was made that anything approaching high speed must be eschewed, and that lightness must be sacrificed to gain strength, simplicity, and a durability that would insure years of economical service. Harry Knox, president and general manager

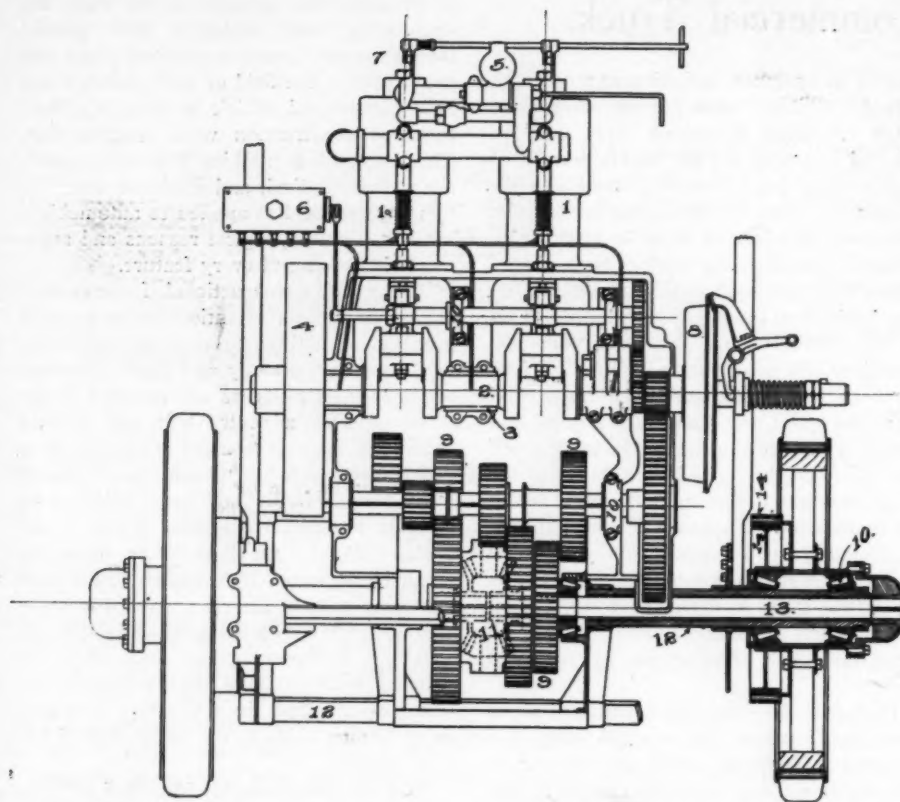
of the company, brought to the work the engineering and designing skill gained through several years of practical study and experience in the field of both pleasure, and light commercial vehicle building, and features of construction were adopted that, while presenting nothing especially novel, are at least radical, and it almost seems in this day heretical as applied to automobiles. He has, however, logical reasons and arguments in defense of every feature.

Briefly, the constructional features that attract immediate attention are a running gear having a three-point suspension channel iron frame directly and rigidly fastened to the rear axle sleeves and attached to the front axle by a center bolt and vertical guides for the axle to move in; power plant and transmission mechanism carried rigidly on the underframe and rear axle; twin-cylinder horizontal explosion motor, water cooled; direct spur gear drive from the crankshaft through sliding gears to the compensating gear in the rear axle; transverse change-speed spur gearing in which the rear axle acts as the secondary shaft while the primary shaft occupies the position of the usual countershaft in a pleasure car; and drive by live axles to the outer ends of the rear wheels.

How one so thoroughly identified with the air-cooling system as Mr. Knox was, came to adopt water cooling, is another and a very interesting story; it is sufficient here to state that he was most anxious to stick to cooling by air because of its simplicity, and

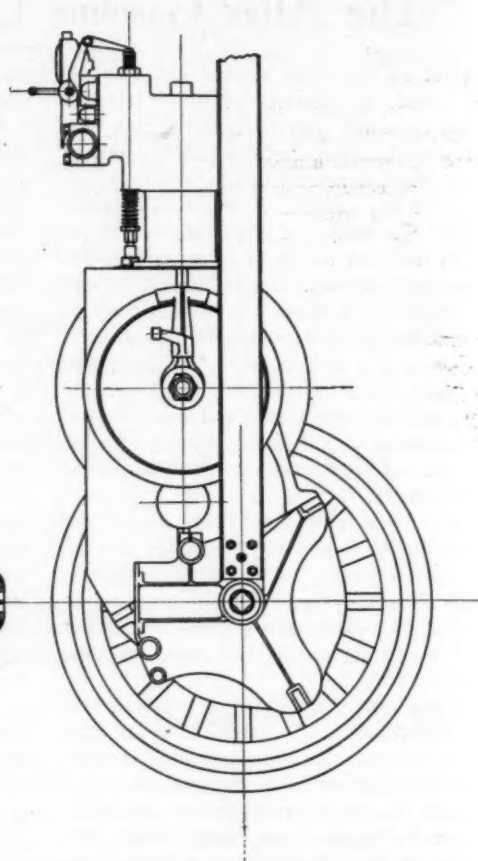


NEW ATLAS TWO-TON TRUCK, FITTED WITH 24-HORSEPOWER WATER-COOLED MOTOR, BUILT BY HARRY A. KNOX AT SPRINGFIELD, MASS., FOR HIS NEW YORK AGENCY.



PLAN, DRAWING PARTLY IN SECTION OF POWER PLANT AND TRANSMISSION OF ATLAS TRUCK.

1—Cylinders. 2—Crankshaft Bearings. 3—Crankshaft Bushings. 4—Flywheel. 5—Carbureter. 6—Mechanical Oilier. 7—Automatic Inlet Valves. 8—Cone Clutch. 9—Three-Speed Sliding Gear Transmission. 10, 10—Timken Roller Bearings in Rear Wheel, on Live Axle, Intermediate Shaft and Valve Cam Shaft. 11—Compensating Gears or Differential. 12, 12—Rear Axle Sleeve and Truss Frame. 13—Live Two-Part Driving Axle. 14—Internal Expanding and Double-Acting External Foot and Hand Brakes.



SIDE ELEVATION OF POWER PLANT AND TRANSMISSION, SET ON END FOR CONVENIENCE OF COMPARISON WITH PLAN VIEW.

that his previous success had been built up on that system; and the first experimental truck built by his new company was fitted with an air-cooled engine having "porcupine" cylinders studded with split pins—a form of air-cooled engine for which he had taken out a new patent. Failing to secure the hoped-for results from this vehicle, another truck was built identical in size and construction except that the cylinders were water jacketed and a circulation system was added. For two months these were tested side by side, doing the same work under the same conditions, and at the end of that period he had proved to his own satisfaction that the water-cooled engine was the more efficient, economical and durable for the large power necessary (24 horsepower) and the very heavy service required, notwithstanding the success of the air-cooled system in pleasure and commercial vehicles of less capacity.

Chains and bevel gears were abandoned for driving purposes and direct spur gear transmission adopted because long experience with chains proved similarly unsatisfactory, the links soon stretching so much under the enormous strains that they would not fit the sprockets and broke repeatedly. Taking a lesson from manufacturers of other heavy machinery, such as street cars, traction engines, machine tools and the like, in which wide spur gears are almost universally used where the heavy work is done,

the engine shaft was made to drive by spur pinion to a large spur gear on the end of the primary change-speed shaft, as shown in the accompanying plan drawing, the ratio of reduction being about four to one.

The carrying of the power plant in a sub-frame directly attached to the axles looks like a return to a method tried and found wanting in the early days of pleasure vehicles on account of the damage done by the excessive vibration. But in the heavy commercial vehicle the conditions are very different; the truck must perform move slowly and the vibration is consequently less rapid, plenty of metal can be used to render the parts strong and, finally and most important, the springs which support the body must be made so stiff and strong to carry loads up to 5,000 and 6,000 pounds that when the truck has no load—which is fully 50 per cent. of the time—the power and driving mechanism would get practically no cushioning effect from the springs, in fact the flexibility of the channel steel subframe gives as much as springs would. Every part of the mechanism, including not only the engine and its parts, but such attachments as the pump, the piping and the radiator, is built especially to withstand the vibration.

The general appearance of the complete vehicle, fitted with readily removable body and top, is shown in the accompanying half-tone engraving from an excellent photograph that shows well all of the exposed

parts. The wheelbase is 8 feet and the tread 56 inches, the merchandise space in the body measures 9 feet 3 inches by 5 feet, wheels are 36 inches in diameter, fitted with 4-inch solid tires. The wheels are mounted on large size Timken taper roller bearings, the bearing cages in the rear wheel hubs being fitted over the axle sleeve, as shown at 10 in the plan drawing. Roller bearings of the same make are fitted at the inner ends of the live axles, at the ends of the intermediate shaft and on the cam shaft. There is no brake on the transmission, but there are two sets of brakes acting on drums fitted on the inner ends of the hub and forming the inner spoke flanges. One set expands within the drums and the other contracts upon the outer surface, being operated respectively by a pedal on the footboard and a lever at operator's side.

Steering is by hand wheel mounted on a vertical pillar and operating through irreversible worm gearing and steering rod in front of the front axle. A 30-gallon gasoline tank is carried under the middle of the driver's double seat, while at the ends of the seat are small compartments with doors opening outward, the compartment on the righthand side containing a double set of batteries and the one on the left side being left to receive tools and other small articles.

Extending longitudinally under the footboard and seat is a large cylindrical water tank, from which the water is piped by hose

from the radiator and to the circulating pump. The location of the radiator, pump and the muffler is plainly shown in the photograph.

The cylinders of the engine are cast separately with heads, water jackets and ignition chambers integral and are bolted onto a large castiron crankcase open at the rear and with a removable plate on top. The cylinder dimensions are 6 inches bore by 7 inches stroke. Inlet valves are automatic, and a small rod extending across the heads of the two cylinders has pendant arms so arranged that by a movement of the hand when starting the engine their ends will press against the valve stems and relieve the compression. Removal of one nut permits the valves to be taken out. An automatic float-feed carbureter of the company's own manufacture, located just above and between the cylinder heads, supplies the gas mixture.

The exhaust valves are opened by a camshaft driven by spur gears from the crankshaft inside of the crankcase, and the five-feed mechanical oiler, 6, is operated by a rod from the left end of the same camshaft. Two of the oil feeds lead to the cylinders and the three others to the crankshaft bearings. From these places the oil makes its way to the bottom of the crank and gear case so that the wrist pins are splash lubricated and the gears constantly run in oil.

The crankshaft, which is turned from solid stock, has main bearings 3 inches in diameter by 5 inches long and has both crank throws on the same side. The bearings are bushed with hard babbitt metal. At the left end of the shaft there is carried a 200-pound flywheel, 4, and at the other end a reversed leather-faced cone clutch, 8, whose inner or female member carries the spur driving pinion on a sleeve. A novel feature in connection with the clutch mechanism is an extra arm on the lever for releasing the clutch, whose purpose is to act as a stop for the change gears when the clutch is released, a foot at the end of the arm pressing against the aluminum flange of the inner clutch member. The extreme right end of the crankshaft receives the starting crank.

A truss frame built up of four three-legged spiders cast from 5 per cent. nickel steel and held together by three transverse rectangular bars, 12, carries the tremendous load of the machinery and the contents of the body. Between the inner pair of spiders the bevel-gear differential, 11, is located and the three secondary change-speed gears, 9, the change gears being bolted directly to the differential. A steel casing bolted to the two spiders closes in the gearing at the bottom and rear, and the open front abuts against and is bolted to the open side of the crank casing previously mentioned, thus forming an entirely closed compartment to protect the whole transmission system.

Steel sleeves 4 inches in outside diameter and of a wall thickness of 3-4 of an inch extend from the centers of the inner spiders through the outer spiders and receive the driving wheels and their roller bearings.

Live axles squared at their outer ends fit into square holes in the heavy hub caps, by which the propulsive force is transmitted to the wheel hubs from the outer ends.

Referring once more to the change-speed mechanism, the gears, as will be seen, are of large diameter and have 2 1-2 to 3 inch faces and four pitch. They are cast from machine steel and machined all over. They give three speeds forward and reverse. The high gives a maximum of fourteen miles an hour. The sliding gears on the primary or forward squared shaft are moved by bell-crank levers operated through rods visible in the photograph from a single shift lever. A second side lever is dispensed with by a simple but ingenious device. The quadrant has an H slot. The shift handle is pivoted on a yoke on the journal so that it can be moved sideways without springing the metal. Just above the quadrant is an eye in the handle. Short lever arms connected with the two shift rods normally are held opposite the transverse slot in the quadrant by springs. Each lever has a stud extending inwardly. When the handle is moved sideways through the slot one or other of the studs, as desired, engages in the eye of the handle and the short lever and the long handle are interlocked and move either forward or back as one piece. Because of their slow movement the gears mesh and disengage easily.

Throttle and spark levers are on top of the steering wheel where they are most accessible. One of the pedals operates the clutch and the other the regular brakes. The emergency brakes are set by the long side lever, which also simultaneously releases the clutch.

One of these trucks made a trip between Springfield and Boston on August 12 with a load of 5,000 pounds and four persons in an actual running time of 10 hours 19 minutes for the 99 miles, or 11 hours 30 minutes elapsed time, including a stop for luncheon. The only stop occasioned on the way by mechanical troubles was one of two minutes, caused by a loosened battery connection.

A similar run from Springfield to New York is being made this week to deliver the truck shown in the photograph to the New York agents. A two-ton load is being carried.

C. G. V. Elastic Coupling.

A spring coupling is placed between the engine and the change-speed gear box of the C. G. V. cars for the purpose of absorbing any intermittent thrusts that might be set up by the impulse of the car when driving over rough roads, and in heavy traffic, where uneven driving is necessary. Other objects of the device are to make the car smoother in starting, to lengthen the life of the mechanism and tires, and to make the cars more comfortable for the passengers. The coupling also acts to some extent as a universal joint, taking up any torsional stresses that might exist in the chassis either

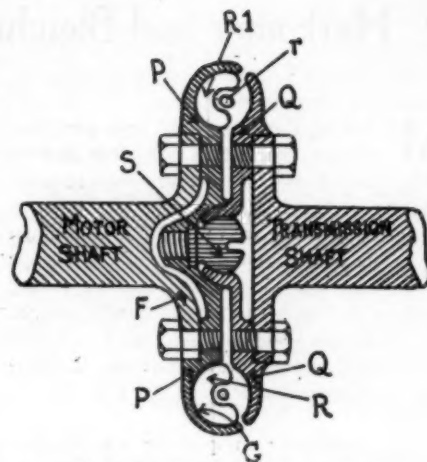


FIG. 1. VERTICAL SECTION OF C. G. V. ELASTIC COUPLING.

temporarily or permanently, thus preventing the binding of shafts and prolonging the life of the bearings.

The clutch shaft, which receives its motion from the engine when the clutch is engaged, ends in a cupped flange F, formed by forging and turning to shape. On this flange is bolted a cast steel circular member, shown in section at P. This is machined all over, except inside the groove G, which follows the outer edge or rim of the member P. Symmetrically disposed in this groove, and cast integral with it, are four partitions or ribs of the shape shown at R, R1.

A very similar cast steel member Q, also carrying four such ribs, not shown, is bolted on the end of the primary shaft of the gear box, which is also forged and machined to the desired shape. A ball-head screw S is screwed and pinned in the casting P through the rearward end of Q and unites the two members with sufficient play to allow relative movement of the two castings, whose meeting surfaces under the screw head are suitably machined. This articulation is kept well lubricated by a screw-down grease cup, not shown. The ball-head screw does not transmit any of the driving effort, its function being only to keep the shafts in line and give them a bearing on each other.

A wire ring r is placed in the center of the cylindrical annular space formed by the two grooves in the steel castings. This ring is merely a retainer for eight coil springs that are interposed between the different ribs of the castings, so that the driving effort passes from the ribs of P through four of the coil springs, which are progressively deflected, to the ribs of Q, thus transmitting the effort from one shaft to the other.

It is evident that when assembling the coupling the two castings are so arranged that the ribs of one alternate with those of the other.

If the front tires of the car are wearing more rapidly than they should, see if the wheels are parallel. The least departure from parallelism causes a certain amount of sliding friction between the tires and the road, with disastrous results.

Herkomer and Bleichroder Races in Bavaria.

From Our Own Correspondent.

MUNICH, BAVARIA, Aug. 14.—The Herkomer competition is a great success. More than 83 out of 105 cars entered were present at the beginning of the events on August 10, which are to continue to August 17. The most noted drivers of all Europe came with the pick of the world's racing cars to do battle for the art trophy offered by Professor von Herkomer and executed by himself, and for the cash prizes, amounting to \$2,500, donated by Dr. von Bleichroder.

The Herkomer competition was divided into three parts: (1) An exhibition of cars on August 11, with prizes for beauty and convenience; (2) a hill-climbing exhibition on August 12 on the Kesselberg; (3) speed contests on August 13, in Forstenrieder Park.

The Bleichroder race was held on the same road as the speed trials, and the touring car trials through South Germany began to-day, to last three days.

The courses chosen by the promoters of the events could not have been better selected to give the visitors a sample of Bavaria's beauty, and that of South Germany in general; the lofty mountain scenery, the meadows, the swift rivers and their waterfalls, the cool woods and the neat little houses make pictures that cannot be easily equalled.

The exhibition which opened the week has never seen its equal, not even in France, and the judges must have had a hard time to decide the awards. First prize was taken by a 28-32-horsepower Mercedes with landaulet body finished in red, exhibited by Herr Roth, of Munich. The second was given to a 40-horsepower Métallurgique fitted with a body by Kruch, of Frankfurt, which is owned by Herr Ladenburg, of Munich, and third prize was awarded to another 28-32-horsepower Mercedes shown by Director Seligman, of Hanover.

When the cars were weighed in for the Bleichroder race on Friday morning, August 11, several of them did not meet the rules. The Dufaux (Swiss) did not have any reversing gear, and was eight kilograms over weight, so it did not appear at the start of the race. Rain began to fall in the evening and lasted all night, so that the competitors had to go to Kochel in the wet for the start of the hill climb early Saturday. The course was seven kilometers (4.35 miles) long, beginning at the sixty-fifth kilometer post in the little village of Kochel, and ending at the seventy-second kilometer post. In this distance an ascent of 250 meters was made. The course put a hard test on the cars and the drivers, for there were many difficult corners and serpentines, following close on one another; on one side was a ravine and on the other the mountain, but iron bars protected the users of the road from falling over the edge.

The machines were started at two-minute intervals, the trials beginning at 10 o'clock with a contest of motorcycles, after which came the touring cars. George Retienne, on a Mors motorcycle, set a splendid pace, making the best time in his class—6 minutes 19.45 seconds. A woman driver well known in Germany—Frau Gertrud Eisenmann—won much applause for her splendid ride. Obruda, on a Puch, made the second best time—6 minutes 59.35 seconds.

The first of the touring cars, an 18-20-horsepower Peugeot, driven by Beissbarth, went up the mountain wonderfully, and M. Perrett, on a 24-horsepower Peugeot, winner of the Rochet-Schneider cup, was much admired for his driving.

Particular interest was shown by the public in the German cars, the Mercedes, Adler, Benz, Argus and Horch, which made quick runs, but especial praise is deserved by the English Daimler, which showed surprising

and the people went in endless procession on bicycles, in cabs, in automobiles and on foot out of town to the Forstenrieder Park to see the speed trials. It is estimated that there were more than 150,000 persons in the park. In the stands could be seen members of the royal house, as the Duke Franz Josef in Bavaria, Prince Ludwig Ferdinand of Bavaria, Duke Luitpold of Bavaria, Duke Karl Theodor in Bavaria, the Duke and Duchess of Calabrien and the hereditary Prince and the Princess of Saxe-Meiningen. Professor von Herkomer was also present and took a lively interest.

The motor cycles were started at 11:20 o'clock, and of course could show still greater speed here on the level, straight road than up the mountain road the day before. Frau Eisenmann made a remarkable run, and there was no surprise when she was announced the winner in her class. Obruba, on a two-cylinder Puch, was the winner in the class for motorcycles of more than 3 1-2 horsepower.

The best times made in the different classes for touring cars were:



DUFAUX RACING CAR, AT MUNICH.—NOTE NOVEL ENGINE AND RADIATOR SYSTEM.

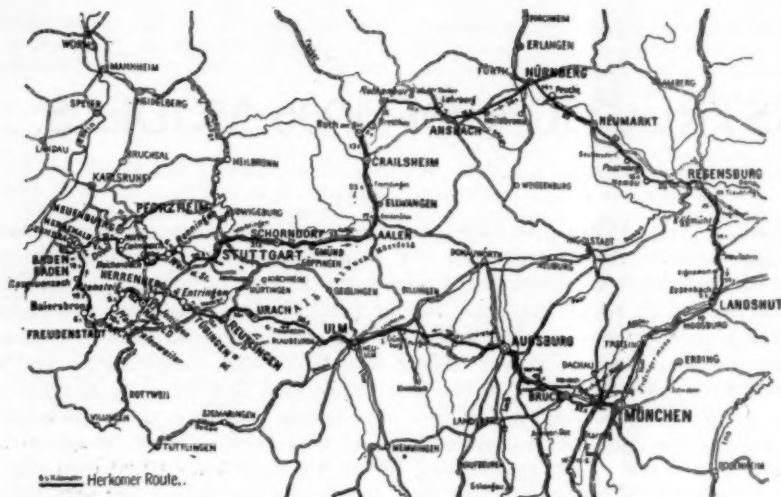
speed. Miss Maud Manville, who owned and ran it, proved to be an excellent driver, and made better time than most of her competitors. The Daimler was faster than the 60-horsepower Mercedes on which Willy Pöge won the speed trials later on the Forstenrieder Park course. In fact, the big cars did not quite meet the expectations of the spectators. The most interesting sights were the racing cars climbing the mountain at marvellous speed, the drivers showing great skill.

The best times made up the hill were as follows: Hieronymus, 90-horsepower Mercedes, 5:34 3-5; Wagner, 85-horsepower Opel, 5:55 1-5; Werner, 100-horsepower Mercedes, 5:56 1-5; Braun, 100-horsepower Oe. Daimler, 6:01 3-5; Hanriot, 120-horsepower Clement, 6:13 3-5; Bugatti, 60-horsepower Mathias, 6:42 1-5.

There was glorious sunshine on Sunday,

First class, Willy Pöge, 60-horsepower Mercedes, 4:12 3-5; second class, Maud Manville, 35-horsepower English Daimler, 4:09 1-5; third class, Max Martin, 20-horsepower Martin, 4:25 1-5; fourth class, Carb Bub, 12-15-horsepower Métallurgique, 5:20 4-5.

The course for the trials was a good stretch of road of about six kilometers (3.72 miles), with only two slight bends. After the start of the motorcycles the crowd pressed so hard against the fence that it broke and fell in the road, but fortunately the cars had not yet started and there was no accident. The eagerness of the public was a great hindrance at times—so much so that Miss Manville protested and was started anew. Her first time was 4:21, and on her second trial it was 4:12 3-5. In the Bleichroder race that followed, over the same course, Braun also protested, but abandoned



MAP OF THREE-DAYS TOURING ROUTE THROUGH SOUTH GERMANY

the protest because he could not be given a second trial, as the crowd had already overflowed the road in order to go home.

In the Herkomer race the light cars again made a splendid showing, while the heavy cars of Tischbein, Pöge and Clarence Dinsmore (driven by Werner), did not attain the speed expected.

Although the Bleichroder race was full of interest, no extraordinary speed was reached, the 120 kilometers in the hour not being surpassed. The road, in spite of being straight, was not the kind on which cars could reach their full speed. The times of the racing cars for the 3.72 miles were:

Werner, 100-horsepower Mercedes, owned by Clarence G. Dinsmore, 3:11 4-5; Wagner, 85-horsepower Opel, 3:13 1-5; Braun, 100-horsepower Oe. Daimler, 3:15; Hieronymus, 90-horsepower Mercedes, 3:15 2-5; Hanriot, 120-horsepower Clement, 3:17 4-5.

The foregoing events closed the first part of the program for the week's competition, the second part comprising the touring trials through Bavaria, started to-day. The first day's trials are from Munich through Bruck, Augsburg, Ulm, Reutlingen and Freudenstadt to Baden-Baden; the second day's run will be from Baden-Baden to Stuttgart, Aalen and Ansbach to Nürnberg, and on the last day, August 17, the run will be from Nürnberg through Neumarkt, Regensburg and Landshut back to Munich (München).

Liedekerke Cup Race a Victory for Belgian Industry.

Special Correspondence.

PARIS, Aug. 14.—The contest for the Liedekerke Cup, run on the Dinant circuit, in Belgium, yesterday, resulted in a complete victory for the native industry. The circuit, which was of a very varying nature, was 102 kilometers 740 meters around, and had to be covered four times, making a total distance of 255.3 miles.

The regulations specified that all the competing cars should be fully equipped touring cars, having a cylinder capacity of not more

than 3.75 liters. A comfortable tonneau body having side entrance, four seats and four passengers or their equivalent in ballast were required.

Of the five French cars which figured among the fourteen starters, only one, an Ariès, obtained a classified position. Tire troubles played havoc among the competitors, very few escaping entirely. Victory finally came to the Pipe firm, Hautvast winning the cup with a stock type of touring car of 99.73 m.m. bore by 120 m.m. stroke (cylinder capacity, 3.75 liters) in 6 hours 51 minutes 12 seconds, or at an average speed of 41 miles an hour. The same firm also secured the regularity cup, having all its team of three in the final classification, namely: (1) Hautvast, 6:51:12; (6) Jenatzky, 7:28:26; (7) Vandepoel, 7:43:21.

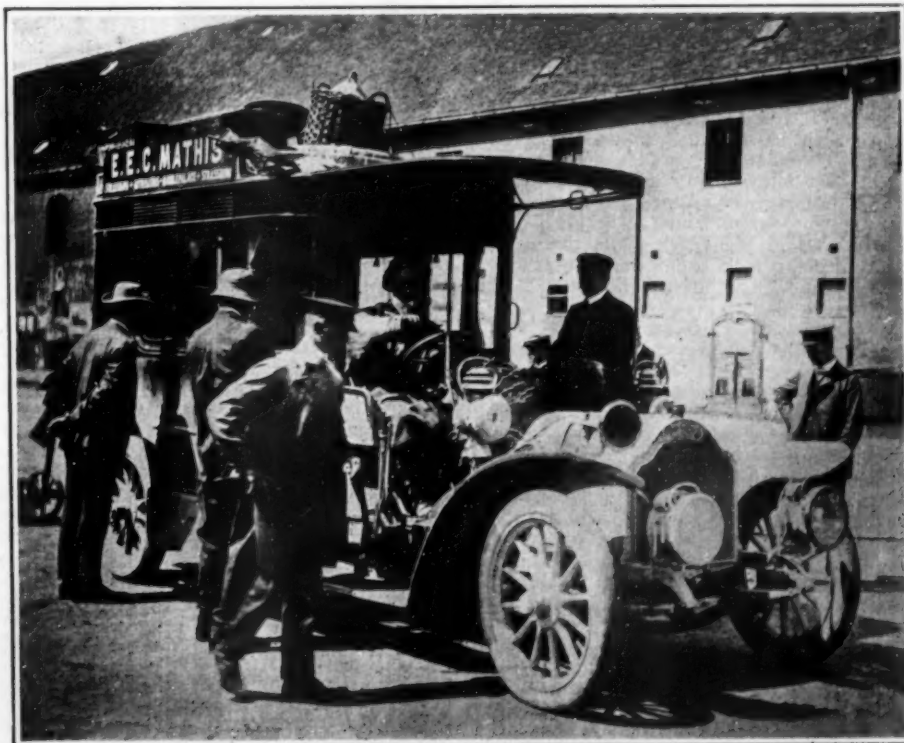
Second, third, fourth and fifth positions

were secured respectively by Fisher (Vivinus), 6:56:12; Baron de Caters (Métallurgique), 7:00:31 4-5; Wilhelm (Métallurgique), 7:20:51; Kuhling (Vivinus), 7:23:49.

King Edward has presented a handsome 18-horsepower Siddeley car to the home for convalescent soldiers and sailors at Osborne, on the Isle of Wight. The car can be used not only for touring, but in desperate cases can be used as an automobile ambulance after removal of the seats. Before sending it down to Osborne House, the King personally tested it in the grounds of Buckingham Palace.

The Maharajah of Scindia has just had a very handsome 16-24-horsepower Fiat landaulet made to order for use of the Prince and Princess of Wales during their forthcoming visit to India in the fall. A 24-40-horsepower Fiat truck will convey the luggage of their highnesses and suite.

The Anglo-French "entente cordiale" was testified to in a very convincing manner by British motorists, before the French squadron left England's shore recently. In a reply to Lieut.-Col. Mark Mayhew's request to place motors at the disposal of the French officers for a run up to Maidenhead on the Thames, no less than fifty cars were forthcoming from the members of the corps and Automobile Club. Ninety officers and their ladies were driven up to Maidenhead by the Britishers, where they embarked on launches for a river trip. Other officers were entertained by the Hampshire Motor Union and that most enthusiastic motoring author, Sir Arthur Conan Doyle.



MATHIS CAR ENTERED IN HERKOMER THREE-DAYS' TOURING COMPETITION.

PROGRESS IN CONSTRUCTION OF 1906 MODELS.

AS a result of an investigation which correspondents of THE AUTOMOBILE have conducted in all the large automobile manufacturing centers, it is apparent that deliveries of new cars for the coming season will be made from two to three months earlier this year than heretofore. American manufacturers of cars and parts and fittings have been busily at work during the Summer months on new models and forms, as if of one accord they had decided to abolish the cause for the familiar complaints about slow deliveries at the beginning of the driving season. January 1 has been set almost unanimously as the time to begin actual deliveries of the new models. Already a few manufacturers of cars have the first samples of their leading models for 1906 completed for exhibition, while the majority expect to have models of their entire lines ready for public inspection not later than October. No doubt is entertained by makers regarding the demand for cars next season, and by bringing out their new models thus early they will be enabled to devote the entire Winter to pushing production in the factories and thus accumulating a stock of vehicles large enough to insure prompt shipments upon all orders originating with the New York shows, and the long list of minor exhibitions that ends only with the coming of Spring. Such expedition of the season's work will give great satisfaction to purchasers everywhere, but particularly on the Pacific Coast and in the Southern States, where in the past many orders have been cancelled because the Eastern manufacturers apparently did not realize that the season there began in January, three or four months sooner than in New England and the Middle States, and, having made no preparations to that end, could not satisfy the demands and implorations for deliveries. The advancement should also open the way for a favorable decision to hold the big national shows—at any rate, the trade exhibitions—of the Winter of 1906-7 in November instead of at the end of January, as they are now held. The following news letters from correspondents in the leading manufacturing centers tell in detail the present status of work on next season's product:

Review of Situation in Busy Cleveland.

CLEVELAND, Aug. 28.—This is the season when the majority of manufacturers are taking or preparing to take their inventories; figuring up how much they have made—or lost in the past season's business. Stocks of materials are all pretty well reduced, all the 1905 machines having been shipped out, and while nearly every maker has practically decided on the changes to be made and the majority have got out a new model, very few have yet started actual work on the production of next season's output. Material orders are being placed, and in a number of cases they have all been closed and the material factories are now working on new parts, but few deliveries of material are being made as manufacturers do not want to stock up during inventory time as it might place the cash balance on the wrong side of the book.

Speaking of cash; the automobile business comes nearer to being a strictly cash business than almost any other that can be mentioned. It is almost directly the opposite to what the bicycle business was in its best days. The material people can get cash, or at best allow thirty days on material; the manufacturers require part cash with orders from agents and the major part of the balance on delivery; while the agents get a deposit with order and the cash on delivery of the car, or practically so. The installment plan is very little heard of.

Most production of cars will start about October 1 this season and dealers will begin getting deliveries in November and December. The shows are being practically ignored so far as being the accepted time for placing new models before the public. Manufacturers have had it clearly demonstrated to them that they cannot delay until the first of the year to make up their minds what they are going to build or what their output will be. The season of production has been altogether too short in the past. Manufacturers could not get their material in time and dealers did not get stock cars until purchasers had wearied of waiting for them, a condition resulting in many lost orders. The example of the few makers who got out the best machines they could early in the season and then rushed production and deliveries while the others were still working out new ideas, is now being universally followed.

Increased production is talked of by every Cleveland maker. It would not be surprising to see twice as many cars built here for next year as were built for this year. The largest makers will increase their outputs 25 to 50 per cent., while among the smaller makers the increase will be much larger, amounting in one or two cases to 200 per cent. In addition, there will be several brand new concerns of importance in this district. It is much easier than formerly to interest new capital in the industry, and the reports of ready sales and prompt returns, together with the general prosperity at this time, make the banks more accommodating than before, all of which will militate in favor of not only increased but earlier production.

Another factor favorable to both of these desired results is the fact that makers are taking more and more kindly to the idea of standardization of parts. This enables the material makers to follow more closely their own ideas, reducing the number of varieties they have to make, enabling them to produce in a systematic manner and rendering it possible to guarantee deliveries better than ever before.

The Garford Company, the successor of the Federal Manufacturing Company, has announced an interesting policy for the new season. Formerly it built about anything that a concern wanted, from small parts to complete chassis, ready to be fitted with body. This year it will confine itself largely to the production of certain lines of parts. From these parts it will be possible to assemble a practical car, but the various parts will be sold to any manufacturers who desire them. The parts will be available only for the larger and higher grades of cars, and the company has decided on a specific number of each of the various parts as its output for the season. The factories have been thoroughly organized to produce these parts, and only the predetermined number, and orders are being taken for certain quantities with certain dates of delivery. Material will be furnished to makers much earlier than ever before, and, barring accidents or strikes, deliveries will be made when promised. To accomplish this the company has its raw material in stock and has the facilities for producing each line of parts judged to be a nicety.

The Winton Motor Carriage Company is

not yet prepared to announce its policy for next season or say anything about its new models. It is understood that the company has been buying considerable new machinery of late and that the output will probably be increased. An interesting departure that will be introduced into the production of the Winton cars will be the testing of every part entering into the make up of the car for tensile and torsional strength. Not only will each piece be subjected to severe strains several times what it is expected to stand, but it is said that one in every fifteen to twenty pieces will be broken and the material analyzed to see that it is up to standard. To accomplish these results the company is installing a Riehle testing machine built by the Riehle Brothers Company, of Philadelphia. It has a capacity of 200,000 pounds.

The White Sewing Machine Company produced about 1,000 cars in the past season, and at least 1,200 and possibly 1,500 will be built during the coming manufacturing season. The company is installing new machinery and rearranging its factory so as to take care of the increase. It is also starting work much earlier than ever before; in fact, production of the new Model F side entrance car was started August 1, and a number have already been shipped to agents. This car has a somewhat larger engine and greater capacity all around than the present model, and will sell at \$300 more. The White company is doing an extensive foreign business, having a branch house in London and agencies in nearly every European country and in Australia, Japan, Hawaii, and the Philippines.

Work on the new Baker factory is well under way, and it has been decided to make the original buildings considerably larger than originally planned, which is a good indication that the company is pleased with the outlook for next season and is planning for largely increased output.

The Peerless Motor Car Company will have its two new buildings completed in about ten days and is closing up its old plant entirely. The new plant has about 110,000 square feet of floor space, and with the installation of new machinery it will have facilities for producing three times the former output. The company is not yet prepared to say anything about the models it will make, other than to state that prices

will be somewhat higher. The new models have been settled on in a preliminary way and actual production will start within thirty days. It is expected that a number of agents' samples will be shipped early in October, which is much earlier than ever before.

The Royal Motor Car Company will have a largely increased output. It is erecting two new buildings, an erecting room 80 by 180 feet, and a stock room 60 by 90 feet. It has been purchasing considerable new machinery of the most modern type and is building jigs for all parts, so that every part will be interchangeable. Work on the new product will start very soon and agents will be supplied early. In general, the car will be the same as heretofore, but there will be improvements in nearly all details.

The Hyslop Body Company, which has been doing mainly a local business for several years, has secured a part of the new building of the Royal Motor Car Company and will be ready to supply high-grade bodies in greater quantities than heretofore.

The Gaeth Automobile Company, which heretofore has confined its business largely to the local trade, will branch out the coming season. It has secured additional capital and will erect a new factory building on the West Side. Its new model is under way, but Paul Gaeth is not prepared to say anything about it except that it will be rated at 50 horsepower.

Preparing for Early Delivery.

HARTFORD, Aug. 23.—From interviews with automobile manufacturers and makers of parts in this section the outlook is very favorable for a large business, and it is certain that they will be in a position to furnish cars much earlier than in the past. There is every reason to believe that both the supply and demand in the automobile line will be much larger in the future than it has ever been in the past.

There is little likelihood that the actual selling season for cars will be advanced. Most people seem to prefer to wait for the New York Show before placing an order, although they may have their minds largely made up beforehand. The difficulty does not appear to have been in the selling end so much as in the manufacturing end. It is the delay in the deliveries that the manufacturers are evidently planning to avoid.

"We expect to have our new cars ready much earlier than ever before," said Wilbur C. Walker, secretary of the Pope Manufacturing Company, "but when they will be ready I am unable to say. We will have cars ready before the first of the year. We were delayed beyond our calculations last year and there is no likelihood of these delays being repeated this season."

President Milton J. Budlong, of the Electric Vehicle Company, said: "I cannot say at this time when our new models will be ready, but they will be ready sooner than last year's were. We are doing some work on them now, but not as much as we would like to. We were delayed in our work on the new models because of the rush of business, and we were obliged to attend to the business in hand. It is a little too early to say much about the plans of the company, as they may be changed."

Clarence E. Whitnev, president and manager of the Whitney Manufacturing Company, states that in each of the company's three departments it makes goods which are used by automobile builders, but his largest business is through the chain department. "A very large percentage of the automobiles made in this country this season have been chain driven," said Mr. Whitney, "and we believe this condition will exist in the future, as the direct driven cars do not seem to be in favor except for

medium weight touring cars, and the greater portion of the business is made up of other models. We understand a number of the most prominent manufacturers abroad gave up the chain drive for the direct gear drive and have returned again to the chains. Most of the American manufacturers who are now making chain-driven machines have settled on the same plan for the coming year, and on account of the conditions referred to, we intend to operate our plant to its fullest capacity right through what might be called the intermediate or dull season, in order that we may accumulate a large stock of chains and parts and thereby prevent the necessity of disappointing customers as it has been necessary for us to do to a certain extent during the busiest portion of the season just past."

"Unquestionably the automobile manufacturers are preparing to make prompt deliveries for 1906," said D. J. Post, treasurer of the Veeder Manufacturing Company and of the Post & Lester Company. "We are planning to get the necessary information about the 1906 models very early this fall, so that we may have the attaching fixtures for Veeder odometers and tachometers all ready for the principal cars by the time of the New York Show in January. Of course, as in previous years, there will be many late ones who will be uncertain as to the exact details of their cars until after the New York exhibits, but the big makers, who now know the cost of change and delay, all seem to be laying their plans for early delivery."

1906 Models Ready for Market.

TOLEDO, O., Aug. 24.—The Pope Motor Car Company is now ready to make its first shipment of the 1906 models of its 20-horsepower cars. About October 1 the first shipment of 30-horsepower cars will be ready and two weeks later its 45-horsepower models will be ready for shipment. These initial shipments will be largely for agents' use in taking orders, but the factory will be in position to fill orders as they are received.

This is the earliest date on which the Pope Motor Car Company has ever made shipments for the coming season, according to the statement of F. M. Keeton, manager of the sales department. These three models will constitute the company's stock patterns for 1906, although, of course, orders for special cars will be filled as received. The 1906 patterns include a number of new ideas and features about which the company will give no information at present.

"This is earlier than we have ever made shipments for the coming season," said Mr. Keeton, "but we expect to do the largest business we have ever done. We are now making an addition which will give us 40,000 square feet additional floor space, or a total of 400,000 square feet. We expect to employ about 1,600 men, and make between 1,200 and 1,300 cars. This year we employed about 1,000 men and made about 1,000 cars in the year ending August 1."

Other automobile concerns in this city are equally alert for the coming season. The Consolidated Manufacturing Company, which makes the Yale automobile, is already busy on its cars for next season, although no information would be given out as to what is being done. "We do not care to say anything at present," is the manager's reply to a request for information.

The Ensien Foundry Company, maker of parts, has just awarded a contract for a large addition to its plant. The company is now at work making parts for next season, and is in position to promptly execute orders in its line.

The Lichtie Automobile Company, which conducts a garage and sales business in this city, has been notified that it can expect

cars for exhibition purposes early in the winter. The present season is by far the best in the history of the business in Toledo, and every indication points to 1906 being as far in advance of this season as this year was in advance of 1904.

Western Companies Active.

ST. LOUIS, Aug. 23.—The 1906 models of the St. Louis Motor Carriage Company are now about ready for the market. In the early start for next season the company is making up for the delay experienced in placing its 1905 cars before the public.

During the past year this concern has improved the facilities in its St. Louis factory, and this has enabled it to turn out its finished product with greater dispatch than formerly.

"We are enabled also to get a good start on the 1906 model," said Jesse French, Jr., secretary and treasurer of the company, "because of the fact that the new model will but slightly differ from that of 1905. Practically no change will be made in the running principles of our machines. We will retain our present form of motors and transmission."

"The only changes will be in the body, clutch and frame of the car. What the change in the body will consist of is as yet undetermined. The frame will be heavier and one-half inch deeper. The new clutch will consist of eight thinner plates, instead of six as in this year's model, and it will work with a long, flexible spring instead of dogs and rollers as at present. The prices will remain the same, and whatever changes are made will not be radical."

The company makes two models, one a 30-34-horsepower and the other of 18-22-horsepower, both of the tonneau type.

The St. Louis Car Company, which recently begun building the American Mors, expects to have its two 1906 models ready for the market by January 1.

Manufacturers of parts are also preparing for early orders. J. H. Neustadt Company is now working on parts for 1906. "We have already received a number of inquiries from customers who are not going to wait for the end of the season to order for the next season," said Jules H. Neustadt, president of the company. "While this indicates that they intend to continue this season's business without intermission, we are going right ahead with our work on parts for 1906, and shall be prepared to make deliveries in three or four months."

"There will be no radical changes in parts from the models of 1905, as far as we are concerned. There will be some change, however, for there are possibilities of improvement in those of the present season. As far as the underlying principle and the actual construction of a car is concerned, there will be practically no changes in the parts we make."

Indians Making Ready.

SOUTH BEND, IND., Aug. 23.—The 1906 models of the Studebaker Automobile Company of this city, have been completed, and the cars are now being tried out on the road. Charles A. Carlisle, of the Studebaker Company, has just returned from a trip to Chicago, which he made in the new four-cylinder car in order to test the motor and other working parts, and despite the fact that rain was encountered and the roads unusually heavy, the car fully met all requirements. The new five-story building, which is to be used exclusively for the manufacture of automobiles, is now nearing completion, and the company expects to occupy it about September 1.

The Casaday Manufacturing Company has just completed a new four-cylinder

water-cooled engine, which will be used in its full line of trucks and wagons for 1906. The cylinders are 5 1/2 by 5 1/2, cast separately, and the motor will develop 35 to 40 horsepower. Another change in the 1906 cars has been decided upon: instead of being gear-driven, as heretofore, friction drive will be used in all of the 1906 output.

Philadelphia Lines for 1906.

PHILADELPHIA, Aug. 24.—The Jones-Corbin Company, of this city, will make a new departure in its 1906 line in two models of high-powered runabouts—28- and 35-horsepower. A 40-45-horsepower four-cylinder four-cycle double side-entrance touring car will complete its line for 1906, the first complete models of which should be finished by September 1, and the company expects to be in a position to make deliveries a month later. The 1906 Jones-Corbin will be equipped with Continental or Michelin tires, as the purchaser prefers. Other changes will include a new construction of the motor and motor bed which will tend to stiffen the frame and insure true alignment.

L. S. Chadwick, president of the Fairmount Engineering Works, makers of the Chadwick automobile, states that the first complete motor of the 40-horsepower 1906 Chadwick touring car has been running in the shops for a week or more. They adopted this plan in order to show up any possible defects. The motor weighs 475 pounds (as against 450 pounds for the 1905 24-horsepower motor). "We are also about finishing our first 1906 marine motors—20, 24-30 and 40-45-horsepower," said Mr. Chadwick.

"There will be two 1906 models of the Chadwick car—a 40-horsepower and the 24-horsepower touring car. The latter will be equipped with a considerably lighter body than the 1905, while the weight of the former will also be reduced. We expect to have our first cars completed about November 1 and shortly after that time will be ready to make deliveries."

Mr. Spear, of the Autocar Company, of Ardmore, Pa., says that the 1906 models of the Autocar will show a few changes from the 1905 line. Next year's models, upon which work is now being pushed, will include the 24-horsepower, four-cylinder, side-entrance touring car and the 10-horsepower runabout. Judging by the progress now being made, it is safe to say that the company will be prepared to make deliveries by January 1. Within the year the capacity of the company's plant has been practically doubled, a large addition having been completed early in the present year.

Perfecting New Models.

BUFFALO, N. Y., Aug. 23.—While the automobile manufacturers and parts makers of this city are busy preparing for the early marketing of their 1906 models and goods, not one of them is willing at this time to divulge the slightest information relative to the changes in style and equipment, or give any idea of the improvements in the mechanism of their forthcoming products. In former years the manufacturers have not had their new goods on the market until toward the end of the calendar year, waiting until "show time" to introduce their new models.

However, the 1906 automobiles and accessories will be placed upon the market considerably earlier. Local makers expect to be doing a lively business in their products by the first of January, and this early start will have the advantage of bringing the new features and improvements to public notice before the annual automobile shows.

The E. R. Thomas Motor Company will probably be the first local manufacturer to place its 1906 product on the market. S. F. Heath, sales manager for the company, in an interview with a representative of THE AUTOMOBILE, said: "We are now working on our 1906 models, but are not yet prepared to talk on the subject. We still have considerable 1905 business to clear up before starting on the manufacture of 1906 products, but I can say now that we will be shipping 1906 cars by next November."

Charles Clifton, treasurer of the George N. Pierce Company, maker of the Pierce Great Arrow, states that his company will be ready for business in the 1906 goods not later than the first of the year. "We will have our early product to begin shipment by about the first of January, but before that time we will have our agents supplied with 1906 model demonstration cars, and we expect to do considerable business in our new cars before the beginning of the new year. We are at work perfecting our new models now, but will not be prepared to give out any details regarding them before October 1."

The automobile parts makers are non-committal as to what their changes and improvements for the coming year will be.

New Cars for New Season.

SPRINGFIELD, MASS., Aug. 23.—Manufacturers here are already busy with models for 1906, and as a result these will be placed on the market much earlier than usual.

The Knox Automobile Company will put on the market a four-cylinder touring car, rated from 30- to 35-horsepower. This company has heretofore confined its output to one and two-cylindered cars, the most powerful being rated at 16-horsepower. The body design of this car has not yet been decided upon. It is expected to get the first cars of this model on the road by November 1. The company usually has its models out in time for the New York Show, but this year it is expected that New Year will see the new machines completed.

Another departure of the Knox Company for 1906 will be a commercial car of increased carrying capacity. The company will not make public the details of this car beyond saying that it will have carrying capacity of between two and three tons. The company has not heretofore entered the field of heavy truck making. Its this year's cars are limited to 2,500 pounds capacity.

The J. Stevens Arms & Tool Company, of Chicopee Falls, maker of the Stevens-Duryea cars, has work well advanced upon a touring car of 40- to 50-horsepower. The company will not give the engine design at present or say when the car will be ready for market. The Springfield Metal Body Company is building bodies for the new Stevens creation. The regular open touring car body will not differ radically from this year's model, there being but a slight change in its general lines. The car will also be fitted with an aluminum limousine body in two styles, the larger of which will have an inside capacity of four or five persons. This body is about the lightest of the limousine pattern, weighing complete about 400 pounds.

The Springfield Metal Body Company has commenced the erection of a new plant in Brightwood, not far from its present plant. This will have double the capacity of the present factory. The firm anticipates a season even more active than the present year. The new factory will be ready for occupancy in the early fall, and the working force will be largely increased.

The Rattan Novelty Company, of this city, is just now experiencing its dull season, and the making of new designs will

await the makers' adoption of body styles for next year. The firm makes a specialty of hampers and baskets for automobiles.

Three Months Ahead in Boston.

BOSTON, Aug. 26.—Boston automobile manufacturers are not to be left at the post in the race which is now going on to get out the new models earlier than ever before. In every one of the factories in and near this city there is greater activity than ever before at this time of year. In the past the designers have usually only finished with their work in August, but this year in many instances the models for next year are well advanced. Some factories are planning to put new models on the market as early as October, and not a few are preparing to give deliveries by January 1. As a rule the factories are fully three months ahead of last year, and there is some concern as to what there will be that is new to exhibit at the New York, Chicago and Boston shows.

Another tendency that is pronounced locally is the production of "lines" of cars. Managers of the companies are a bit reluctant as yet to give out much information about their models, but it is known that in two or three factories the workmen are engaged on three or four different models of cars in place of the one or two models that were put out last year and in preceding years.

One of the concerns which will put out a more extensive line this year than in the past, and which is prepared to guarantee delivery on and after January 1, is the Waltham Manufacturing Company. The line is to consist of two 20-horsepower touring car models, a 20-horsepower semi-racing runabout, with detachable tonneau, and a 16-horsepower runabout, sold either with or without rear entrance detachable tonneau or fixed tonneau with swing front seat. The buckboard line will include a friction drive car, listing at \$375. The first model of this car is now being tested, and it is expected that it will be a revelation in the way of low-priced automobiles.

The Phelps Motor Vehicle Company, of Stoneham, is also preparing to give deliveries on or before the first of the year, fully three months earlier than deliveries in 1905. The line will include a runabout, two moderate-priced touring cars, and the large touring model that has been made in the past.

The shops of the Napier Motor Car Company of America, at Jamaica Plain, are busily engaged on the parts for the 1906 American Napier models. What these are to be has not been made public, and will not be for some time; but an officer of the company states that January 1 deliveries are on the program.

The Ariel Motor Car Company is also preparing for early deliveries, and will have out a 1906 model by October. The Ariel was put on the market last year at the Boston show in March. This year a touring model will be made, and perhaps a second model, although this has not been settled.

Another car which came out at the Boston show was the Sturtevant. Only a few of these machines were built this year, but the Sturtevant Mills Company is at work on some important designs at its factory in Dorchester. The company does not anticipate putting out its machines, however, much before the Boston show next spring.

The Corbin Machine Company, of Peabody, which put out the Gas-Au-Lee last spring, is not ready to announce its plans for 1906, and the same conditions prevail at the factory of the Stanley Motor Carriage Company, in Newton.

Grout Brothers, of Orange, Mass., have had at their Boston salesroom for the past three weeks a demonstrating car of the new gasoline type which they will put on the market for 1906. This car has a four-cylinder, vertical engine of 28-30-horsepower. The company will also turn out a six-cylinder gasoline car. Immediate deliveries are probable on the four-cylinder car. The Grout steam model, it is expected, will not show many changes from that of 1905.

The Crest Manufacturing Company, of Dorchester, is to be in the field in about two months with an entirely new model and a line of cars. Deliveries will be given in December and January.

Local agents and branch managers are looking forward to a busy winter, with none of the quiet that has usually been the feature of the month of December. Many of them are expecting new models before the fall riding season is over, and very few anticipate having to wait for the New York show before they can show their customers what they have to offer for next season. The early indications are for another busy year, the demand that has been so pronounced this year having apparently not been satisfied by any means. There are in this section, also, indications of a considerable advance in the demand for commercial wagons and trucks.

Tire Makers Ready for Business

AKRON, Aug. 23.—Automobile manufacturers in this city well understand that the trade season for 1906 will open earlier than usual. Makers who are introducing changes in their tires for next season have prepared for the earlier opening by finishing their models in good time, and will be prepared as a general thing for the winter exhibitions and the trade. The automobile industry in this city is confined to tire making, with the exception of one firm, the Frantz Body Manufacturing Company, makers of bodies, and they do no original work, leaving the designing and modeling to others.

The B. F. Goodrich Company, perhaps, realizes more than any of the local companies that the automobile dealers will have their machines on the market exceptionally early. From the best information, the season for 1906 machines will open as early as September or October, earlier than expected. The Goodrich Company announces, however, that no great changes have been made in its tires for next year, and it is already prepared to place finished goods in the hands of the car manufacturers for 1906.

The Diamond Rubber Company also realizes that the season will open earlier than usual, and inasmuch as few changes are to be made in its line of tires, it is also prepared to meet the demands for car makers. The company is still making tires for the 1905 trade, and announces that there will be no radical changes in its product. It will, however, introduce some new varieties of tread and offer a larger selection.

Assistant General Manager S. G. Carkhuff, of the Firestone Tire & Rubber Company, makers of solid tires, states that the automobile season will open somewhat earlier than usual, but that fact will work no hardship on his company, as there will be very little change in the company's tires. Mr. Carkhuff added that his company would likely put a new pneumatic tire on the market, but if so, it would not be for three or four months yet.

J. A. Swinehart, head of the Swinehart Clincher Tire & Rubber Company, is also of the opinion that the season will open earlier than usual. "We are getting ready now for the automobile shows," said Mr. Swinehart; "we will be ready earlier than

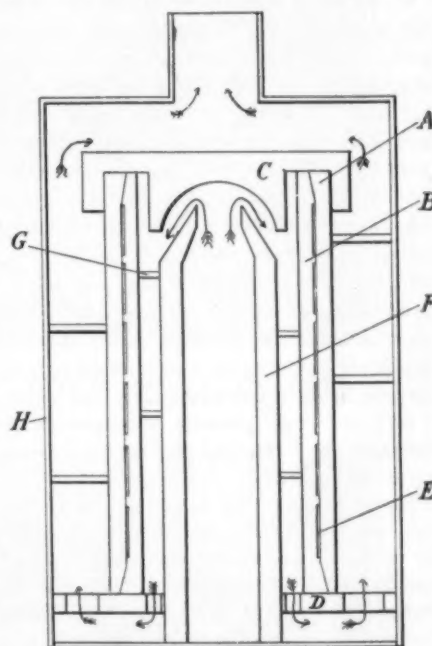
usual, and at our shows we expect to have a new and novel method for making our display. Unlike the others, we will make some radical changes in our solid tires. We are concaving the sides of the tires more than heretofore. Our two years' experience has taught us that the more we concave the tires, the nearer we get the same results had from pneumatic tires, because it renders them more resilient. We are changing all of our molds at present, so as to make all of our tires according to this new style. We are also introducing a system of re-beding tires."

New Flash Generator.

A new flash steam generator brought out recently by M. Roche, a French inventor, possesses a number of features that appear to be most attractive. There are no small, delicate parts, and the generator can be cleaned inside and outside with ease. The illustration shows diagrammatically the principle on which this apparatus is constructed. Two cast steel cylinders, A and B, are accurately turned so that one fits closely within the other; the adjoining surfaces are ground to a true fit. Two caps, C and D, held by studs and nuts, keep the cylinders in their proper relative positions. On the outside of the inner cylinder is cut a helical groove E, 4 inches wide and 1-16 inch or less in depth; in a generator of the standard size, 12 3-4 inches in diameter and 22 inches high, this groove is about 8 feet in length. Within the inner cylinder is still another tube F, of refractory material, in the center of which is placed a gasoline or kerosene burner having a single large jet. Flanges G are formed in the inside of the cylinder next to the burner tube, so that when the latter is in place a helical passage is formed through which the products of combustion are forced to travel, passing through the openings in the lower cap and then emerging into the space between the outside of the outer cylinder and the exterior casing of the generator. Here again the gases are forced to take a winding course by another set of helical flanges formed on the outside of the cylinder A and fitting close against the outer casing H. The flanges not only form a long passage for the gases so they will have time to give up much of their heat, but also assist in absorbing the heat. When the generator has been sufficiently heated, water is forced by means of a pump into the lower end of the helical groove between the steel cylinders, becoming hotter as it rises and finally emerging at the top, where the engine supply pipe is connected, in the form of steam. The passage between the burner tube and the inner cylinder is one inch wide and of 6 1-2 inches pitch, while the outer passage is 1 3-4 inches wide and of 7 1-4 inches pitch.

It is claimed by the manufacturers of this generator that in case of accident damage to the burner, or, if the regular fuel supply gives out, wood, coal, charcoal or any other combustible may be burned in the fire space with sufficiently good results to bring the

car home under its own power. Batteries of these generators are, it is said, very successful for use when large powers are required, while the absence of complications



ROCHE STEAM GENERATOR.

makes the apparatus attractive for automobile and other comparatively small power plants.

CLUB ORGANIZED IN OMAHA.

Special Correspondence.

OMAHA, Aug. 24.—The Omaha Automobile Club was organized yesterday at the Commercial Club rooms, with the following officers: President, Thomas A. Fry; Vice-Presidents, Gould Dietz and Dr. Gilmore; Secretary, John Parrish, and Treasurer, H. Vance Lane. The objects of the club were stated as follows: To induce agreements as to road rules and speed regulations; to improve roads; to attain a better understanding among autoists and between them and the farmers and team owners.

Committees were appointed to draft constitution and by-laws. It is probable that the club will be incorporated, and that a club house, or at least luxurious quarters, will follow in a short time. For a while the admittance fee will be only \$5, the intention being to get every automobile owner in Douglas county on the rolls.

This is the first attempt made in Omaha to organize a club of automobile owners and drivers. The number of machines in town has nearly doubled this season.

We took our first ride in an automobile last week when Ed Porter took us spinning for a short distance on Howard street. Tuesday Captain Lyle took us out on the Suwannee Springs road, and we fairly flew. Since that time we have made up our mind that when we again "hit the grit" it will be in an automobile.—*Live Oak (Fla.) Democrat.*

Non Stop--Economy Test at Long Branch.

WITH a distance of 2,915 miles to its credit, the Frayer-Miller air-cooled car won the Long Branch six-day non-stop and economy contest at midnight, Saturday, August 26, the actual running time being 143 hours 46 minutes. Instead of stopping, however, the car continued to run until 3:30 p. m. Sunday, bringing the total mileage up to 3,202 in 159 hours 24 minutes. The longest non-stop run was of 1,866.4 miles, which was covered in 96 hours 53 minutes. The Frayer-Miller car differs from other air-cooled machines in having each cylinder fitted with a jacket through which air is forced by a centrifugal blower, cooling being accomplished by convection. There are four cylinders, arranged longitudinally in front, and the motor is rated at 16 horsepower.

Second place was taken by the Corbin car, which covered 2,321 miles in 143 hours 37 minutes and stopped at midnight. Like the Frayer-Miller car, the Corbin machine has a four-cylinder air-cooled motor placed longitudinally in front; but the radiating surface is composed of soft metal combs inserted in the cylinders. Air circulation is maintained by fans of the usual type. The motor is of 16-horsepower. The manufacturers state that the car was assembled and finished in the greatest haste for the contest, and was barely finished in time to take a single preliminary spin over the course. This lack of the usual "tuning up" process makes its performance all the more creditable.

The Wayne car, which was third, covered 1,902 miles in 145 hours 2 minutes. This car has a two-cylinder water-cooled motor of 16 horsepower.

Following are the summaries:

Frayer-Miller car.—Mileage, 2,915. Time, 143 hours 46 minutes. Total mileage, 3,202 in 159 hours 24 minutes. Non-stop mileage, 1,866.4 in 96 hours 53 minutes. Gasoline consumption, 211 gallons. Oil consumption, 10 gallons 1 pint.

Corbin car.—Mileage, 2,321.6. Time, 143 hours 37 minutes. Gasoline consumption, 190 gallons. Oil consumption, 29 gallons.

Wayne car.—Mileage, 1,902.8. Time, 145 hours 2 minutes. Gasoline consumption, 134 gallons. Oil consumption, 31 gallons.

The "tire test" held under the auspices of the New Jersey Coast Auto Assn. was announced as one of the features of the week, but it did not come up to expectations, to say the least. The Maxwell-Briscoe Motor Car Co., of Tarrytown, N. Y., volunteered the use of four cars for the test, and the promoters of the carnival purchased the tires which were "tested." Each car was equipped with two makes of tires. Though it was intended that each car should at all times carry its full complement of four passengers, in order to make the test as severe as possible, the cars sometimes car-

ried a single passenger and sometimes five each. The "observers" were in many cases hotel chambermaids and boys who wanted to get free rides, and who would jump out and vanish when they had had all the riding they wanted. Consequently the records were kept in a very loose manner, and cannot be taken seriously. Some of the tires were applied by experts and some by novices; one of the latter was seen using a screwdriver as a tool. On two of the cars no nuts were screwed on the lugs, the idea being to save time in changing tires.

The tire manufacturers do not recognize the contest, in the arrangement of which they have had no voice; and the manufacturer to whom the trophy is awarded will doubtless refuse to accept it. The redeeming feature of this affair was the excellent running of the four Maxwell-Briscoe cars. They ran continuously for six days and nights, making a total mileage of 1,780 without serious trouble. They maintained a moderate speed and kept close together all the time. Their work met with considerable favorable comment.

The boulevard over which the endurance contest and the tire test were held extends from Seabright to Sea Girt, a distance of twenty miles, and is smooth and level. At each end, where the cars turned, were tents in which supplies were stored.

An automobile "show" was held in a small building at the rear of the West End Hotel, but it attracted very little interest.

On Thursday, August 24, a series of gymkhana races were held, including backward race, water-carrying race, obstacle race, pick-up race, and the like.

Cape May Races.

Interest in the three-days race meet at the Cape May, N. J., beach was naturally centered in the four big racing machines—the 80-horsepower Darracq driven by A. L. Campbell; the 120-horsepower Gordon-Bennett Fiat driven by Louis Chevrolet; the 60-horsepower Ford racer, driven by Henry Ford; and the 120-horsepower Christie double-ender, driven by its designer and builder, Walter Christie.

Nine events were listed for the first day, Friday, August 25; but owing to the non-arrival of some of the big machines it was only possible to run off minor events. A 24-horsepower Fiat, driven by Cedrino, captured the kilometer event with moving start for middleweight cars; time, 39 1-5 seconds. Something of a sensation was caused when Mrs. Clarence C. Fidler, of Philadelphia, in a Packard, won the kilometer race for touring cars up to 30-horsepower; time, 56 seconds. The third event, a kilometer race for touring cars up to 50-horsepower, driven by owners, was won by H. J. Thropp's 40-horsepower Winton in 59

seconds. The same car won the kilometer race for touring cars up to 40-horsepower carrying owner and three passengers. Time, 51 1-5 seconds.

On Saturday, the second day of the meet, the weather was fine and the wind light; but the beach was not in its best condition, and no records were broken. The 80-horsepower Darracq, driven by Campbell, covered a mile in 38 seconds, thus, as it afterward proved, winning the Cape May cup, valued at \$1,000, for the car making the fastest mile on the beach. In the trials for this cup the 120-horsepower Fiat, driven by Chevrolet, made the distance in 39 2-5 seconds; the Christie 120-horsepower car in 39 4-5, and the Ford 60-horsepower car in 40 seconds. Much better work was expected of the Fiat and Ford, but neither car was in its best trim. The Fiat was fitted with road gearing, and lacked tuning up, as did the Ford also. Mrs. Fidler, with her 28-horsepower Packard scored another win, capturing the mile event for touring cars up to 30-horsepower.

The summaries are as follows:

One mile, middle weight cars.—Won by Henry Ford, 60-horsepower Ford. Time, 51 3-5 seconds. Only competitor.

One mile, for cars up to 30-horsepower.—Won by Mrs. C. C. Fidler, 28-horsepower Packard; George Jones, 20-horsepower Jones-Corbin, second. Time, 1:15 3-5.

One mile, for cars up to 50-horsepower.—Won by J. N. Wilkins, Jr., 40-horsepower Winton; J. H. Thropp, 40-horsepower Winton, second. Time, 1:31.

One mile, for cars up to 40-horsepower.—Won by J. N. Wilkins, Jr., 40-horsepower Winton; J. H. Thropp, 40-horsepower Winton, second. Time, 1:16.

One mile, for cars up to 20-horsepower.—Won by Thomas Beckers, 20-horsepower Pope-Toledo; George Jones, 20-horsepower Jones-Corbin, second. Time, 1:25 3-5.

One mile, for heavyweight cars.—Won by Chevrolet, 120-horsepower Fiat; Campbell, 80-horsepower Darracq, second. Time of winner, 51 4-5 seconds; of second, 57 seconds.

One mile, for cars up to 40-horsepower, carrying four persons.—Won by C. J. Swain, 40-horsepower Winton; J. N. Wilkins, Jr., 40-horsepower Winton, second. Time, 1 hour 24 minutes.

The kilometer trials for the big cars were held on Sunday, the long list of entries and events having made an extra day's racing necessary. Christie, in his double ender, covered the kilometer in 23 2-5 seconds, winning the \$500 cup and equalling the American kilometer record made by Macdonald with a Napier at Ormond beach last winter. Christie's time was made in the second of a number of attempts. The big Darracq finished the kilometer in 24 seconds, and the Ford in 25 seconds, the latter making but one trial.

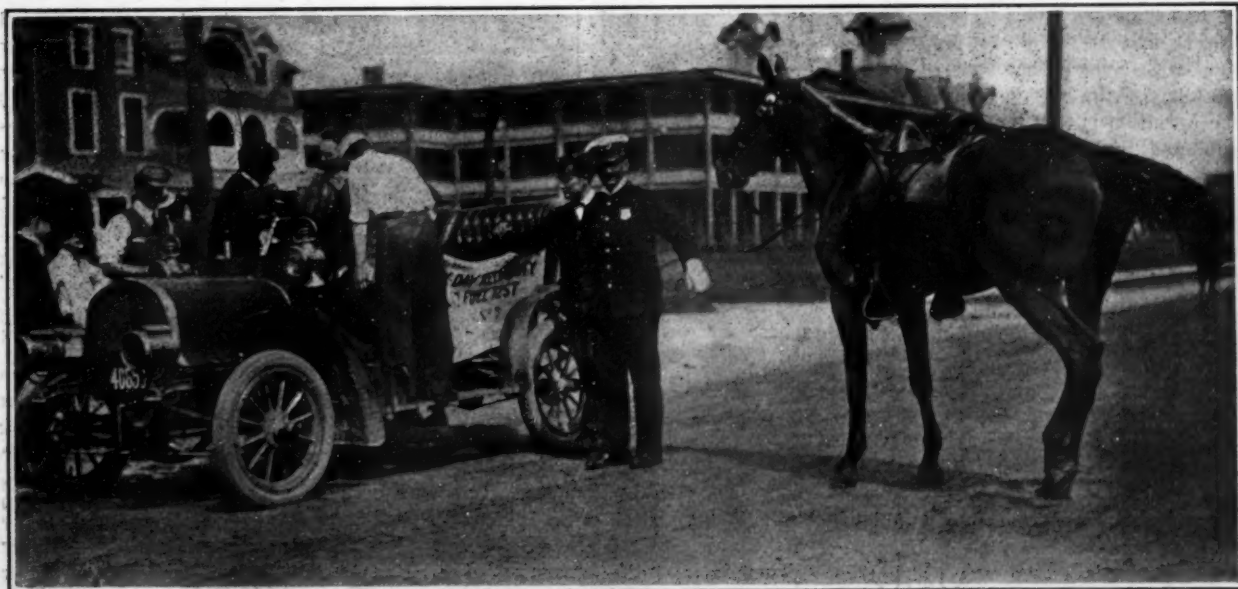
(Continued on page 244.)



PASSING FUEL SUPPLIES TO THE FRAYER-MILLER AIR-COOLED CAR IN THE NONSTOP-ECONOMY TRIALS AT LONG BRANCH, NEW JERSEY—THIS CAR WON THE CONTEST, COVERING 2,915 MILES IN 143 HOURS, 46 MINUTES.



WAYNE TOURING CAR, ONLY "WATER-COOLED" IN CONTEST.—THIS MACHINE COVERED 1,902 MILES IN 145 HOURS, 2 MINUTES.



POLICE OFFICER'S HORSE OBSERVING CORBIN AIR-COOLED CAR.—THIS CAR COVERED 2,321 MILES IN 143 HOURS, 37 MINUTES.

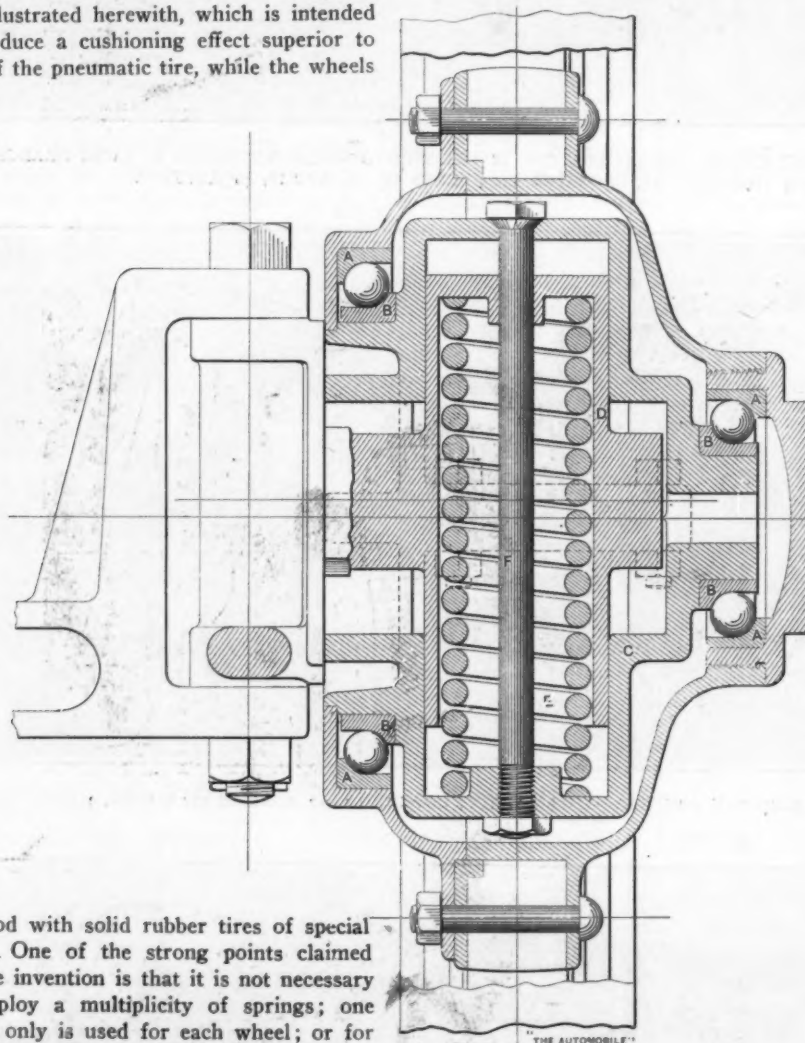
Cliff's Spring Hub.

Innumerable attempts have been made to obviate the well-known train of annoyances due to the use of pneumatic tires, without sacrificing the resiliency that is so essential to the pleasure automobile. Puncture-proof tires, spring wheels, auxiliary spring devices and so on, have been invented in various forms; but the pneumatic is still universally used on pleasure cars, while the efforts to solve the problem are continued.

One of the latest and most promising inventions in this direction is the spring hub illustrated herewith, which is intended to produce a cushioning effect superior to that of the pneumatic tire, while the wheels

down in the guides formed for the purpose within the shell *C*. Bolt *F* is merely an aid in assembling the parts. After the two halves of the shell *C* are bolted together the bolt *F* might be removed without doing any harm. The helical spring *E* rests on the bottom of the casting *C*.

A little careful study of the illustration will make the action of the arrangement clear. In the case of a front wheel, such as that illustrated, the entire wheel, with its hub shell, bearings and inner shell *C* moves up and down with reference to the axle end



TRANSVERSE VERTICAL SECTION THROUGH CLIFF SPRING HUB.

are shod with solid rubber tires of special form. One of the strong points claimed for the invention is that it is not necessary to employ a multiplicity of springs; one spring only is used for each wheel; or for heavy loads a second spring can be nested within the first to take the excess load. It will be understood that the ordinary spring suspension of the car is retained.

As the illustration shows, all parts of the hub spring mechanism are contained in the enlarged hub of the wheel and are protected from dust and accident by the steel hub shell, in which a quantity of lubricant is placed. Ball or roller bearings may be used, although the illustration shows balls. The ball races *AAAA* are fitted into the hub shell, and the cones *BBBB* into a hollow steel casting *C*, these two parts being concentric. The inner shell, upon which the hub shell revolves, is held against turning by an extension *D* of the spindle or axle end. This extension is free to slide up and

and its extension *D*. The part *C* serves as a base for the spring to rest on, while the weight of the car is supported by the spring, which is under compression. The spring can, of course, be made of any desired degree of flexibility, according to the weight of the load to be carried. Thus, sudden shocks sustained by the wheel are absorbed by the spring instead of being communicated to the axle.

This device is the invention of Edward Cliff, of New York, who was for many years actively engaged in the supervision of spring work of various kinds, from light

carriage springs to Pullman car suspension, and therefore has a practical knowledge of what may be expected from springs. The actual design was worked out by Benjamin W. Tucker, M.E., 143 Liberty street, New York, who is superintending the construction of a number of wheels that will be used for demonstrating the qualities of the suspension. The device is, of course, as well adapted for use on solid rear axles as on front axles. Mr. Cliff expects that the use of springs in the hubs in place of compressed air in the tires will not only make the car ride more comfortably but will lengthen the life of the various parts because of the reduction of vibration and consequent crystallization.

CAPE MAY RACES.

(Continued from page 242)

Following are the times made in the kilometer trials:

Christie—0:24 2-5, 0:23 2-5 and 0:23 4-5.

Darracq—0:24 1-5, 0:24 3-5, 0:24, 0:24 4-5 and 0:24.

Christie tried for the mile record, hoping to beat the time of 38 seconds set the previous day by the Darracq; but the best attempt was timed at 39 1-5 seconds, which Christie repeated twice. The big Darracq also tried for the mile mark, but cracked a cylinder in making the distance in 40 3-5 seconds and had to be towed off.

The following times were made in the mile trials:

Christie — 0:48 4-5, 0:39 1-5; 0:39 2-5, 0:41 1-5, 0:39 1-5, 0:42 1-5 and 0:41.

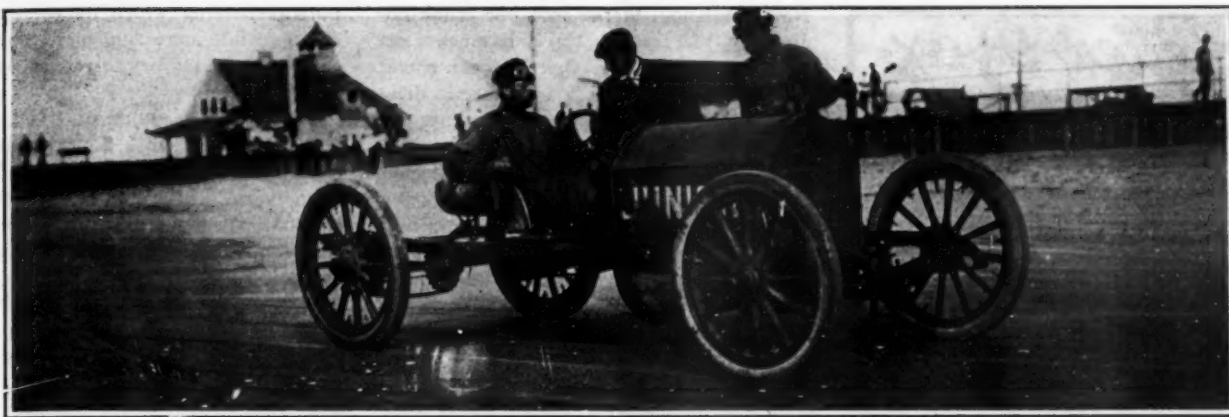
Darracq—0:40 2-5, 0:41 3-5 and 0:40 3-5.

Ford—0:43, 0:44 1-5, 0:44 3-5, 0:41 and 0:42.

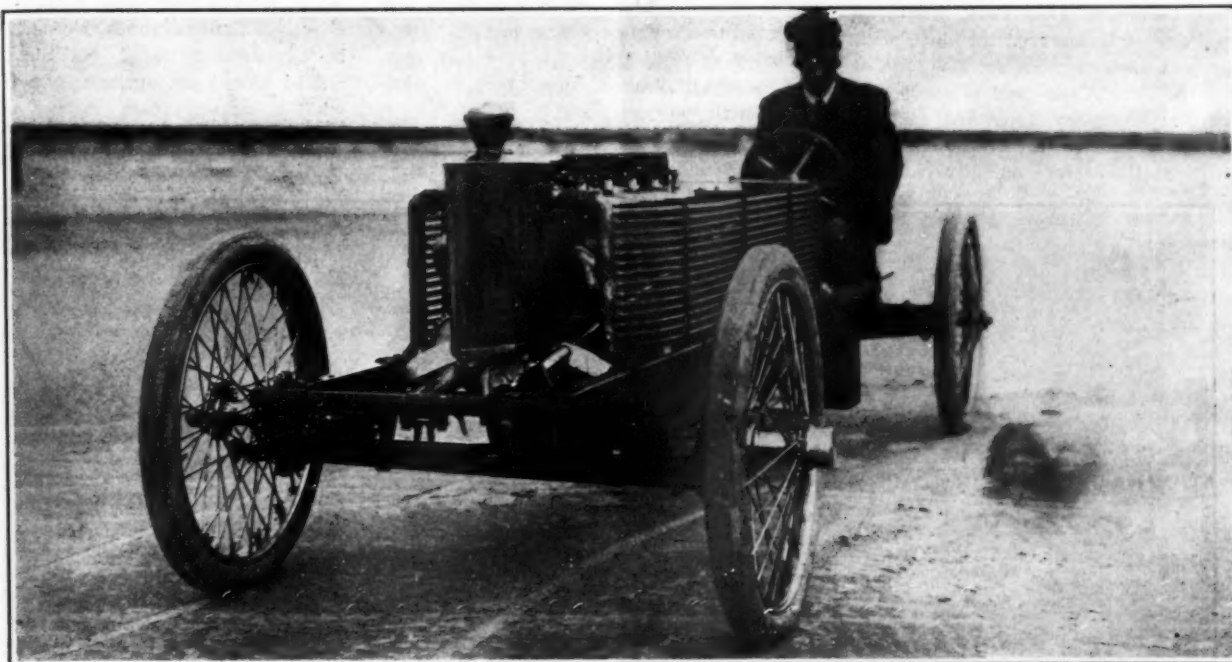
The British light delivery van trials, to extend over a period of thirty days, will begin September 18 with an opening run from Oxford, which is one of the four centers for the trials. The others are Kidderminster, Leicester and Cambridge. The vans entering have been divided into four classes: A—loads up to 5 cwt.; B—loads from 5 to 10 cwt.; C—loads from 10 to 20 cwt.; and D—loads from 20 to 30 cwt. A and B cover the same distance—2,405 1-4 miles; C and D each cover 1,814 1-4 miles. The routes are the same with the one difference of the turning points being pushed further out for A and B classes. Unfortunately the numbers of entries received have not come up to expectation, although the club hoped great things in the remaining five days till they closed.

A motorcycle service has been recently established in part of the Transkei (Kaffirland) South Africa, plied by natives who carry the mails from Mount Frere to Kokstad, about 70 miles, taking in the outlying stations between.

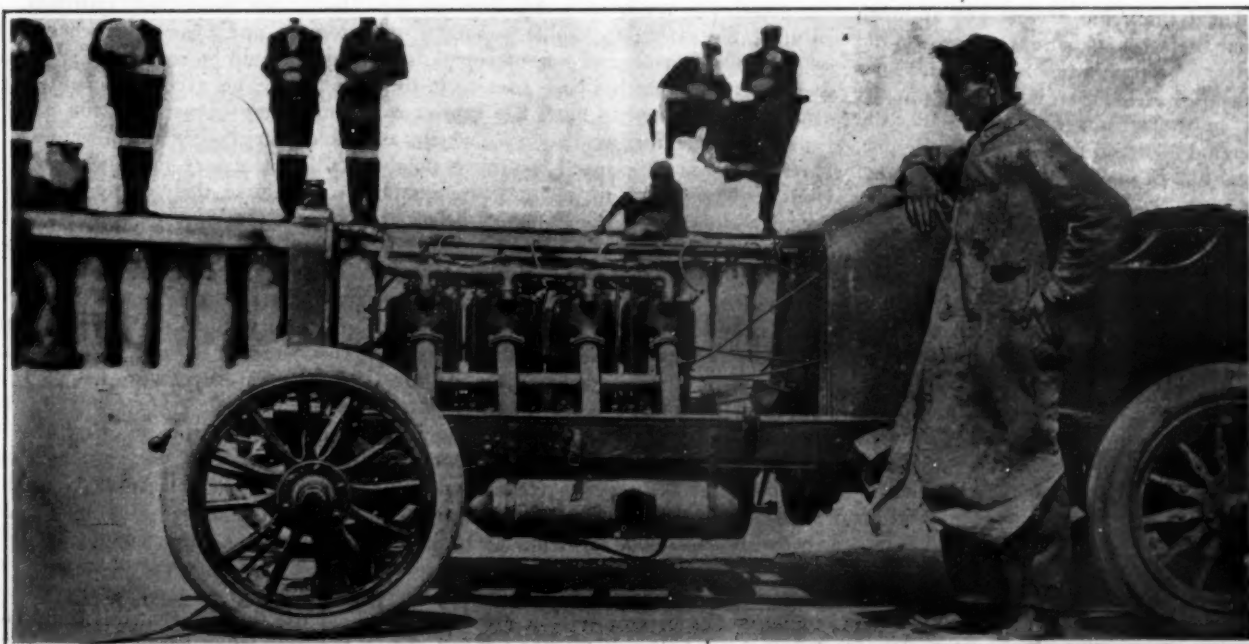
Our automobile club is gaining members every day. Daily there are new names added to those who would like to have a machine and cannot afford one.—*Washington (Ia.) Democrat*.



CEDRINO, THE ITALIAN DRIVER WHO IS BOOKED TO START IN THE VANDERBILT RACE, AT THE WHEEL OF THE FIAT JUNIOR RACING CAR AT CAPE MAY RACES.



HENRY FORD IN HIS SPECIAL RACER WITH WHICH HE COVERED THE MILE, FLYING START, IN 40 SECONDS



CAMPBELL STANDING BESIDE THE DARRACQ RACER WITH WHICH HE WON THE FLYING MILE IN 38 SECONDS.

Letter Box

Orphans' Day in Lafayette, Ind.

Editor THE AUTOMOBILE:

[257.]—I send you a photograph taken August 24 before the start of the orphans' outing automobile parade of Lafayette, Ind. Following in the footsteps of New York and other large cities, we yesterday gave to the orphans of the homes in this city an automobile ride and picnic. There were twenty-five machines in line, carrying 168 children. The line was formed as shown in front of the city hall. From there the parade traversed the business portion of town, then headed for the picturesque and historical Tecumseh Trail Park, where an elaborate dinner was served the little ones. The run was made without accident, and at 4 o'clock the Fort Wayne and Wabash Valley Traction Company furnished cars to bring the party back to the city. The children enjoyed themselves as only children

New England), merge into one trunk-line highway, the through travel is much more conspicuous than the strictly local travel. It is no uncommon thing any more to drive out to the main road between Syracuse and Utica, N. Y., and note three or four touring automobiles pass inside of an hour. I have done this myself several times this summer.

Perhaps more than half of these cars bear letters and numbers which show them to be from more or less distant sections of the country. It is probably safe to say at this time that as many automobiles run over the stretch between Utica and Syracuse as there are passenger trains over the same line on the New York Central Railroad. Of course, this does not mean that even one per cent. of the total passenger traffic goes that way, but it does mean that the road traffic has become a factor. It has probably doubled this year over last year, and easily multiplied four times as compared with two years ago.

No other conclusion is possible than that as roads are improved, and touring increases

notwithstanding which its use grows constantly, while increasing speed and efficiency call for new facilities to render better service to mankind.

Within the memory of living men expensive railway lines have gridironed the continent until—in the United States, at least—new construction is practically at an end. Much of the energy and capital profitably employed for a generation in building steam lines is, for the time being, engaged in electric railway promotion and extension.

All these commercial and national economies, added to the ever-increasing surplus of American wealth, would seem to find no other outlet equal to the building of motor roads. As a financial proposition taken on just the right lines, the results ought to be of a far-reaching and most satisfactory character. Such roads would, of course, be expensive to build, but the outlay required would not amount to a fraction of what a railway costs, leaving the rolling stock out of the question altogether. Now only would they be infinitely cheaper to



ORPHANS' DAY IN LAFAYETTE, IND.—TWENTY-FIVE CARS CARRYING 168 CHILDREN LINED UP BEFORE THE CITY HALL.

can, but I think the drivers got as much fun out of the exclamations, questions and cheering of the children as the little ones did themselves. There was much interest taken in the project from the start, and although the drive was a hot, dusty one, there is talk of making the affair an annual event.

R. A. LEVERING.

Lafayette, Ind.

Interstate Automobile Travel.

Editor THE AUTOMOBILE:

[258.]—To one who lives within a few miles of the main highway between New York State and the West, i.e., the Mohawk Valley, evidences of the rapidly increasing interstate travel by motor car are apt to be more real than they are to those who live in the great centers of population, East or West. In cities automobiles are used so much as a matter of course, and for everyday business, that their local service vastly exceeds their use for touring purposes.

But in the Mohawk Valley, where so many routes between the East and the West (including the bulk of traffic to and from

in popularity, the main trunk lines of the United States are to handle a volume of automobile travel quite out of comparison with anything that has been seen up to this time. This brings to mind the subject of special roads for automobiles, which at present is being discussed in various populous centers, though their largest use would seem ultimately to be for our principal trunk-line highways.

You can go from New York to Philadelphia or Boston by a dozen different routes, but through this section you have only the Mohawk Valley for the east-and-west run, until you go above the Adirondacks at the north, or go through the Catskills at the south. A special automobile road through here would be as great a single boon as the touring fraternity could have at this time, especially as the present roads are not good. Not having been anticipated when our present systems of transportation were projected, the automobile found no adequate or suitable provision for its coming. It has so far had but one consistent friend—the common law of the road;

build per mile than railroads, but since termini and near approaches to towns or cities would be rendered unnecessary, there would be no need to expend vast sums in purchasing property in the heart of valuable districts, which is always a vast capital outlay necessary in railway construction.

Of course, this is only a suggestion of a subject that is being more and more discussed nowadays. The result would not only be additional safety, but also increased speed, comfort and security. Our old toll roads proved unsatisfactory in part because they were a half-way measure, brought forward when travel was of slight volume, and when even the shortest trips were taken nearly always from necessity. To-day everyone travels, until the aggregate mileage, charged for on a basis that would never be felt by the owner of a motor car, would amount to a sum undoubtedly sufficient to pay all the expenses of construction and a fair interest on the investment as well.

I use the idea that this could be done on the basis of a charge that would "never be felt by the owner of an automobile" ad-

visedly. The great majority of people do not feel the cost of the postage they pay on their correspondence, and yet the sum-total of it supports a very expensive railway mail service and the most extensive post-office system in the world; it allows for free delivery in the cities and in the country, and supports a veritable army of people. It also goes a long way toward making up the deficit on second-class matter. Another trouble of the old toll-road system was the fact that the charges were too high not to be felt by those who used them; consequently the day of cheaper railway transportation was a public boon. The secret of successful automobile roads will undoubtedly be a nominal charge to a vast traffic.

The idea, somehow, stirs the imagination.

ROBERT BRUCE.

Clinton, Oneida Co., N. Y.

From Pittsburg to Bobcaygeon.

Editor THE AUTOMOBILE:

[259.]—Some of your readers who are interested in the road conditions of various touring routes, may be interested in the somewhat unusual tour from Pittsburg, Pa., to Bobcaygeon, Canada, which the writer has just finished.

Dark rain clouds were gathering threateningly as we strapped our suit cases to the running boards of our Reo touring car in Pittsburg, and it was with many misgivings that we threw in the clutch for the beginning of the 500-mile run, much of the way to be over unknown roads.

It was 8 o'clock the morning of Monday, July 24, when the start was made. Descending Forty-third street, we crossed the bridge into Millvale, and after a few minutes steered our way clear of the abominable streets leading to the Evergreen roads. As we passed the Evergreen Hotel, our spirits began to rise, and we felt that we were fairly started.

The first excitement was furnished by a rooster, whose active gyrations to avoid us finally landed him under a rear wheel, thus ending a promising young career.

A little later, an examination of the cylinder oiler disclosed the fact that some obstruction in the pipe was preventing the oil from reaching one of the cylinders, and consternation seized us. By resorting to the expedient of shooting oil through a cap in the pipe with an oil gun at intervals of from five to ten miles, we managed to get along.

When the turn on to the Perrysville road was made at McCune's tavern, it was found that the recent rains had left the highway quite deep with mud, so we resorted to tire chains. Clearing skies soon improved the road, and after a few miles we removed the chains and bowled merrily over some excellent roads to Zelenople, shortly beyond which we met with the inevitable *bête noire* of automobilists—a puncture—which caused a delay of one hour.

From Portersville in to Mercer the roads were very bad. Mud, gullies, rocks and

hills formed a combination that would break a tourist's heart. At Mercer, which we reached at 5 o'clock, we secured some excellent gasoline at a drug store, and decided to push on to Meadville, which we reached about 7.30 P. M. over some fairly good roads.

Leaving Meadville at 9 o'clock the next morning, we found the sandy roads through Saegerstown and Edinboro right pleasant riding and the scenery beautiful, but slow going was necessary owing to the rutty condition of the sand. The deep sand had a tricky tendency to hold the wheels in the ruts in spite of the driver's desire to leave them, and then suddenly to shoot the car off at a tangent, which was liable to land the unwary in the ditch on the right or against the bank on the left. This, and the attention required by the clogged oiler, made the arrival at Erie late. After luncheon we had the oiler blown out and started at 2 o'clock for the run to Buffalo.

From Erie to Buffalo, the going was fine, and as I opened the throttle and advanced the spark, the words of Maeterlinck's rhapsody hummed in my ears along with the drumlike sound of the cylinders, as I watched the streak of road disappearing beneath the car and was dimly conscious of trees, fences and houses gliding past on both sides. With the exception of a few stretches here and there, the entire run to Buffalo was like boulevard driving, and the distance of 100 miles was covered in about five hours.

The night was spent in the Bison City, and Wednesday morning the twenty-seven miles to Niagara Falls was quickly covered, but there was trouble and delay at the Canadian border. To comply with the customs requirements, I had to find a broker, who for a consideration furnished the necessary two bondsmen, and after leaving a deposit of \$25 and paying \$2 more for a license, I was allowed to proceed. But all this consumed time, so that it was 1 o'clock when we struck the rocky, disreputable streak of dust called a road that leads to St. Catharine's. In that Canadian city we spent an hour at dinner; then, as the roads improved materially, we began to make better time nearing Hamilton, and passed through some of the most picturesque scenery of Western Ontario.

We got into Hamilton at 5 o'clock with a puncture, and as the reports of automobilists regarding the road to Toronto were not encouraging, we decided to remain over night. Comfortable accommodations were found and we slept late the following morning, being in no hurry to leave Hamilton, as we wanted to spend Thursday night in Toronto. Starting about 11.30 A. M., we made a slow and careful run, arriving at Toronto about 3.30 in the afternoon. The roads were found to be much better than the description given had led us to expect.

Friday, the final day of the run, found us up bright and early. The directions to follow Queen street to the race track, and

thence to the Kingston road were very simple, and we soon found ourselves on that broad highway, whose powdered limestone surface made as fine a boulevard as I ever rode over. For fifty miles to Port Perry, our speed was restricted only by the desire to feast on the beautiful scenery, which perfect weather enhanced to a delightful degree. Along this part of the shore of Lake Ontario are found beds of gravel peculiarly adaptable to road making. The gravel is of limestone formation and grinds up into a fine powder under the wheels of vehicles, packing into a sort of crust. This famous road from Toronto to Kingston was built about fifty years ago, and having been kept in excellent repair ever since, it affords a rare treat to the automobilist who has the good fortune to come touring this way.

The Kingston road, however, is not proof against causing punctures, and twenty miles from Toronto it became necessary to change an inner tube. At Whitby, we turned off the Kingston road for Port Perry, but found the going just about as good. From Port Perry to Lindsay, thirty-five miles, the roads deteriorate somewhat, but still can be placed in the "excellent" class. More punctures delayed us at Lindsay, and some difficulty was experienced in mending the tires promptly. Advancing into the interior of the country from Lindsay, we were impressed with a peculiarity in the actions of horses we met, scarcely any of which had ever seen an automobile. They became greatly terrified as we approached them, but when we stopped the engine and remained passive by the roadside, allowing them to pass us, they were easily managed. Not so, however, with horses that had met the strange vehicle before; to them it was potent of mischief, which its silence only intensified.

The road, from Lindsay on, formed a perfect zigzag, with numerous crossroads to puzzle one. Frequent inquiries regarding the way were necessary, and as the houses had become very scarce, we halted at many crossroads in uncertainty. The roads were fairly good, however, and without further incident we entered Bobcaygeon by crossing the bridge over Little Bob Channel about 6 o'clock in the evening of the fifth day of our tour, having driven over 500 miles through interesting and attractive country.

Bobcaygeon is merely a hamlet of about 300 population, situated on one of the connecting links of a chain of lakes, remarkable for its location in the midst of wild and beautiful country combining forest and lake, which offers the tourist a variety of recreation in boating, fishing, and bathing, or driving over smooth, hard roads, a number of which radiate in several directions for miles into the surrounding sparsely inhabited country.

S. A. STEWART.

Bobcaygeon, Canada.

Duke Reynolds has purchased Clyde Templin's automobile. It's a "hoss" that won't gnaw the shade trees.—*Exchange*.



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**Air-Cooled
Car
Performances.**

The excellent performances of the two air-cooled automobiles in the six-day endurance contest recently ended at Long Branch, N. J., are interesting in view of the fact that the air-cooled car is the result of American development. The small air-cooled motor was born in France and there it was brought to a comparatively high state of perfection at an early date. It was applied to bicycles and tricycles with success, and is still largely used in France for such work; but, strange to say, for practical car work the air-cooled motor is unknown there. It was not until the American inventor, with his keen perception of inherent possibilities, took up this type of prime mover that it grew to the importance of furnishing the power for a full-sized touring car. Now American automobiles are made with air-cooled motors having one, two, three or four cylinders; these motors are placed in every imaginable position, vertical or horizontal; motors under the hood or under the body; set longitudinally or transversely; with or without forced draught; with integrally cast flanges or with variously formed pins and fins inserted in the cylinder walls; and so on. And, what is the main point, American cars embodying these features are in successful everyday operation on the road, side by side with water-cooled motors.

Not only does the air-cooled motor compete on even terms with the water-cooled

motors, but it actually aspires to the highest road racing honors, two cars with air-cooled motors of hitherto unheard of power having been entered for the Vanderbilt cup elimination trials. The Long Branch contest demonstrated the fact that an air-cooled motor, even of comparatively large size, will run continuously as long as the functions necessary to its operation are properly performed. The winning car ran 1,664 miles at an average speed of a little more than seventeen miles an hour without stopping the motor; doubtless this would have been exceeded had not the carbureter become clogged. This will not surprise those who are cognizant of the work done every day by air-cooled machines, but will doubtless open the eyes of many who have supposed air-cooled motors suitable only for the lightest work.

**Catalogues
Sans
Facts.**

In most manufacturing lines it is generally supposed that the manufacturer who issues a catalogue does so for the purpose of describing his output in a way that will enable an intending buyer to form a correct judgment whether or not the articles described meet his needs. After looking over a miscellaneous lot of catalogues of automobile builders, one is led to believe that some other purpose must have been intended by the publishers. Many manufacturers apparently have three objects in view, which are in the order of their importance: (1st) To make for the car claims that involve little less than actual perfection; (2nd) To enlighten the reader as to the personal opinions of the builders of the car on its merits; and (3rd) To tell something about the construction of the car.

That this is not an exaggeration may readily be proved by glancing over a number of automobile catalogues.

The following are extracts from a lot of catalogues taken at random, and refer to cars of all kinds and prices: "We claim superiority over all other cars, regardless of price." "Our runabout has the same design and all the good features of the most expensive large cars." "The most consistently practical motor car in existence." "Superior to any other, regardless of price." "The best value ever offered." "Marks an era in automobile construction." "The only practical automobile ever built." The list might be continued almost indefinitely, but these extracts are sufficient.

It is evident that, as the various statements are contradictory, all cannot be true; and it is more than likely that none of them is quite exact. No intelligent person reading such statements will give them very serious consideration. "But," say the manufacturers, "we are ready and anxious to prove our claims." No such sweeping statements can be proved without exhaustive competitive tests of all the cars involved, so proof is a practical impossibility.

Any buyer assumes that a manufacturer

builds the best car he knows how to build if he is an honest man. But that is just the point; does he know how better than any one and every one else? It is certainly a pretty egotistical stand to take, and the egotist is not usually the safest man to credit. And again, the homemade opinion, however honest it may be, can carry little on no weight, for, to the novice, one manufacturer's word is as good as another's.

After having his attention drawn to a car by advertisement or advice, the interested person usually collects a number of catalogues as the first step toward choosing a car, and reads them with a good deal of care. He scans the introductory pages usually filled with glittering claims and the opinions of the manufacturer, and discovers that each one makes the best car. Being endowed with a certain amount of intelligence, he naturally skips that part thereafter and passes on to the descriptive matter. Here again many catalogues are made up so as to work against their own interests. The investigator will find, perhaps, a large headline announcing that a description of the motor will be found below. "Our motor is built on the most approved modern lines," says the description; "it is light and powerful and constructed of the best materials, and will be found entirely satisfactory," and so on. After a few such "descriptions," the reader is about as wise, so far as the car is concerned, as when he started, but he has gained some information about catalogues, and commences a search for one that tells something about a car.

In these days of beautiful engravings and fine presswork, the opportunities for producing really excellent catalogues are almost unlimited, and there are few things that give more satisfaction to the well-informed man than a complete catalogue giving facts, figures and technical descriptions and illustrating with halftone and line engravings, showing clearly the parts and their functions. The days of mystery regarding motor construction are happily gone, and the confidence of the builder in his output is in no way better expressed than by taking the intending purchaser into that confidence in making plain the details of construction.

People think in these days; and if a manufacturer makes a series of sweeping statements and fails to give any information to substantiate his claims, he runs a great risk of being set down as a gas producer.

There are, of course, many concerns that get out catalogues that are in every way admirable, and, fortunately, the number of such is increasing. People do not buy cars merely because their makers say they are good; they must have opportunity to satisfy their own preferences and intelligence, and if catalogues do not present opportunities for making comparisons they will seek for information elsewhere, and likely as not sales will be lost to the builder from whom particulars were originally sought.

In many cases the catalogue is the manu-

facturer's credentials in the view of the buyer, and the latter will consciously and unconsciously form his opinion of the car from the character of those credentials. A good car needs a good catalogue.



Among the voices raised in protest against a continuance of the dangerous and questionable sport of track racing, following the series of recent accidents at Detroit, Cleveland and Buffalo, is that of Col. Albert A. Pope, who has given extra force to his remarks by withdrawing all his cars from track events. In a public statement he said:

"From the outset my judgment has been strongly against track racing for high-powered cars. The great danger to drivers and machines makes me feel that it is an entirely unnecessary risk to life and limb, and should therefore be stopped at once.

"I have permanently withdrawn all my cars from track events, and I trust that that kind of racing will be so discountenanced by the public as to insure its discontinuance. Racing should be confined to road contests, in such events as are free from extraordinary dangers, and which, in a rational test, prove something about the valuable points of competing machines."

Several of the leading automobile clubs that were promoting track meets for the fall months have decided to abandon them, one of the latest to make such announcement being the Chicago Automobile Club. The Cleveland, Buffalo and Syracuse clubs have also pronounced against the holding of any more track races.

KISER EXPRESSES APPRECIATION.

Special Correspondence.

DAYTON, O., Aug. 26.—Just previous to the Kiser testimonial races here to-day, Earl Kiser dictated the following telegram in St. Clair Hospital, Cleveland, O., to Barney Oldfield:

"I thank my friends with all the emphasis of profound gratitude and appreciation for their kindness to me. Their many acts of courtesy have greatly lessened the darkness of my misfortune. I would not exchange the friendships which to-day's events evidence for any earthly thing. I wish I could be with the boys to-day. I will return to Dayton as soon as my condition permits, and it will be my home always. Human sympathy is, after all, the sweetest thing in life, and I appreciate the warmheartedness of Dayton more than ever before. The presence and assistance of my racing opponents is most gracious, and I will never forget them. They are to-day the best people on earth and the nicest lot of boys that ever honored the home city.

(Signed) "EARL KISER."

A French automobilist is said to have offered a prize for the poultry fancier who will breed fowls that will not run across the road in front of automobiles. That's all right in its way; but the trouble is not so much that they run across the road, but that they run halfway across, stop hesitatingly, change their minds, and then flutter back in wild alarm to the side they were first on—for all the world like some individuals of the same sex in the human species.

A. P. B. A. Cup Race on St. Lawrence River.

By W.P. STEPHENS.

IN marked contrast to the lack of interest which has characterized all auto-boat racing about New York this year is the third contest for the gold challenge cup of the American Power Boat Association, held last week on the St. Lawrence River under the management of the holder, the Chippewa Yacht Club, of Chippewa Bay. In the second contest, late last Fall, the cup was won by *Vingt-et-Un II.*, owned by Willis Sharpe Kilmer, of this club, thus transferring it from salt to fresh water. It was challenged for by the Thousand Islands Yacht Club, of Alexandria Bay, nine miles up the St. Lawrence, and eight other contestants entered under the deed of gift as representatives of other clubs. The representative of the defending club, *Chip*, owned by Jonathan Wainwright, of Ogdensburg, is a typical Leighton launch, with plumb stem, round torpedo stern and moderate freeboard with straight sheer; the hull is of the ordinary single-skin carvel construction and not specially light, the decks have a very slight crown, and as she is used more for speeding about the river in good weather than for real racing, there is one long, open cockpit. The dimensions are 27 feet over all, and 3 feet 4 inches breadth; the motor is the ordinary Leighton two-cycle, with four cylinders, each 4 by 4 inches, with the Leighton reversing screw with three blades. A special canvas cover, like a low tent, was fitted to the cockpit for this race.

The representative of the challenging club was *Radium*, built a year ago at Alexandria Bay and since much improved, new motors being installed; she was partly burned a few days before the race, but by diligent work the damage was repaired. The other competitors were *Invlese*, of the Riverton (N. J.) Yacht Club, of about 26 feet with a three-cylinder Giant motor; *Flip*, of the Hartford Yacht Club, well known about New York; *T Z R*, a new boat by a local amateur, Capt. Johnson, with a special motor built by her owner, Mr. Richardson, of Wilmington, Del.; *So Long*, another new local boat designed and built by Fitz Hunt, with two Trebert motors; *Flying Dutchman*, the new racing auto-boat of H. L. Bowden, with the side frames and two Mercedes motors of the famous racing-car transferred bodily to her; the new Lozier *Shooting Star II.*, *Panhard II.* and *Skeeter*, a new Seabury launch. With a rating of but 44.56 under the rules of the A. P. B. A., *Invlese* received an allowance of 58 minutes 35 seconds from the largest boat, *Skeeter*, of 74.54 rating.

The course was specially surveyed on the ice last Winter, a straight leg of 6 miles up the river from Oak Island, a turn of 3-4 mile diameter marked by three flags, a straight leg of 6 miles down, with another turn of nearly a mile diameter. With the

exception of one point where it ran down to 18 and 20 feet, the depth of water ranged from 40 to 100 feet, and the course was free from all obstacles, every shoal and rock near to it being specially marked by red flags.

The Chippewa Yacht Club is made up of men who were once active in sailing and the management of races, and who now run their own launches, and in this case all details were well arranged in advance and the series of three races was carried off without a hitch. The match was in the hands of a special committee including S. G. Averell, of the Chippewa Yacht Club; R. H. Eggleston, of the Thousand Islands Yacht Club, and Paul Dashiell. Mr. Averell, with the club measurer, Ernest Serrell, both experts in gas engines and auto-boats, spent the four days prior to the races in running each boat, taking the revolutions of the motor under all conditions; so that the ratings were based on more reliable data than is usually obtainable in a race.

The first race of the series took place on August 24, in clear weather, with a fresh breeze that threatened to kick up a sea, but finally fell during the race. At the end of the first round *Chip* was a few seconds behind her allowance, but as the leaders neared the finish she was very close to *Invlese*. The latter stopped, through some defect in her batteries, losing nearly a couple of minutes, and *Chip* won. *Flying Dutchman* broke her main shaft several days prior to the race and did not start; *Radium*, after stopping on the line at the start, withdrew after one round; *Panhard II.* came to grief through her magneto on the second round and could not be repaired for the following races. The largest boats, *Shooting Star* and *Skeeter*, failed by 13 to 15 minutes in saving their time on *Chip*.

On the second day Mr. Leighton ran the engine of *Chip*, finishing nearly two minutes ahead of *Invlese* and some 15 minutes ahead of the two largest boats. On the last day the contest narrowed down to *Invlese*, *Chip*, *Flip*, *Shooting Star* and *Skeeter*—*Chip*, again handled by Mr. Leighton, winning by two seconds after an exciting and sensational finish in which she only took the lead within the last 50 yards. The elapsed times of these boats for the three days were:

	Aug. 24.	Aug. 25.	Aug. 26.
<i>Chip</i>	1:52:38	1:52:57	1:59:10
<i>Invlese</i>	2:00:26	2:01:01	1:59:12
<i>Flip</i>	1:38:51	1:39:39	1:36:10
<i>Shooting Star</i> ..	1:14:18	1:17:50	1:15:31
<i>Skeeter</i>	1:16:23	1:18:23	1:19:53

The rating of *Chip* was protested on Friday by *Invlese*, and on Saturday morning the boat was taken out and run over the measured mile, the revolutions being carefully taken by the committee. The rating was based upon 455 revolutions per minute,

the highest speed on the first tests for rating being 451 revolutions per minute. In the extra tests one mile down stream was run in 3 minutes 39 seconds, the speed being 440 1-2 revolutions per minute; in a two-mile run, up and down, the average time was 3 minutes 41 1-2 seconds, and the speed 440 1-2 revolutions per minute. The best round made in the races was at a speed of 16.36 miles, or 3 minutes 40 seconds per mile; as it was not possible that the motor could run up to the assumed figure of 455 revolutions per minute, on which the rating was based, the protest was rejected by the committee.

Commodore Bourne, of the New York Yacht Club, whose handsome island home overlooks the course, presented a beautiful silver pitcher for the boat making the best time in the three races, the winner being H. A. Lozier's *Shooting Star II*. The results of the three races were computed on the point system, but as *Chip* won every race this was not necessary.

The Chippewa Yacht Club retaining the cup, the next match will be over the same course.

MATHESON VANDERBILT CARS.

Two Machines Nearly Completed Are Stripped 1906 Touring Car Models.

Special Correspondence.

HOLYOKE, Mass., Aug. 25.—The Matheson Motor Car Co., of this city, expects to have completed within a week the two cars which will be entered in the Vanderbilt Cup race elimination trials. The Matheson company will enter one car in its own name, and Tom Cooper will drive it. The other will be entered by Lowell M. Palmer, Jr., of New York City, for whom it is being built.

With modesty becoming to newcomers in the big racing game, the Mathesons are saying little and claiming less. The cars they are preparing for the contest are in no sense regular racing machines, being merely stripped machines of their forthcoming 1906 model touring car, somewhat lightened and strengthened for the race. The cars will embody improvements on this year's model, but these are not radical, and at present the firm is reticent regarding just what these changes are. This not only because of the coming contest, but because they consider it too early to give away new ideas in next year's cars.

The racers are of 40 horsepower, with four-cylinder engines, though neither of these points will mark advances on the present cars. They will weigh, stripped, about 2,100 pounds.

An official of the company stated this week that its hopes of eligibility in the elimination trials will be based considerably on the reliability of the cars. It is known that they are capable of a speed of 60 miles an hour, and it is believed that this should be sufficient to land a place on the American team.

The Holyoke racer will be given a thorough try-out before being sent to Long Island. Tom Cooper, the Matheson driver, will make his first appearance at the wheel of a road racer in this car, and it is realized here that his lack of experience in this class of racing will be an important factor in the outcome.

KISER TESTIMONIAL IS LARGELY ATTENDED.

Five Thousand Spectators Witness the Smashing of the Mile Record on a Half-Mile Track—Oldfield, Burman and Fisher Help to Make Meet a Success.

Special Correspondence.

DAYTON, O., Aug. 26.—In the Earl Kiser Testimonial races given here this afternoon, Charles Burman, of Los Angeles, Cal., driving a Peerless stripped touring car, broke the record for the mile on a half mile track, going the distance in 1:18 and clipping one and two-fifths seconds off the previous record held by himself. The mile was the first of a three-mile exhibition event against time. The three miles were covered in 3:54 4-5.

Barney Oldfield drove his *Green Dragon* two miles against the record but failed to break it, making the distance in 2:39 2-5.

Oldfield and Burman engaged in a match race, Oldfield driving his Peerless *Green Dragon* and Burman his Peerless touring car. The race was to be three heats best two out of three, and the distance was three miles. Oldfield won the first two heats. The first was won in 4:53 3-5. Burman's time was 4:53 4-5. The second heat was won in 4:47 4-5. Burman's time was 4:48 1-5.

Five thousand people attended to-day's races. Nearly that number of dollars resulted from the testimonial to Dayton's favored son, who was injured while preparing to race against Webb Jay and Barney Oldfield for the Diamond trophy at Cleveland two weeks ago. The races were attended by Barney Oldfield, Charles Burman, Carl Fisher and other well-known drivers. Over 700 auto enthusiasts from out of town were here.

Following are the summaries:

Three miles open to runabouts.—Harry Gaddis, Franklin, 1st; Ed. Borderwisch, Queen, 2d; Mr. Gibbons, 3d. Time, 5:54 1-5.

Three miles against record by Charles Burman. Time, 3:54 4-5. First mile in 1:18, breaking record for mile on half-mile track.

Three mile open to light touring cars.—Scott McDonald, Reliance, 1st; Ed. Borderwisch, Queen, 2d; Harry Cappel, Winton, 3d. Time, 6:20 2-5.

Fourth event.—Match race, Barney Oldfield against Charles Burman, three miles, two out of three heats.—Oldfield won first two heats. Time, 4:53 3-5, 4:47 4-5.

Three miles open to heavy touring cars carrying passengers.—Carl Fisher, Pope-Toledo, 1st; John S. Johnson, Winton, 2d; Howard Friend, Pope-Toledo, 3d. Time, 5:45 4-5.

Three-mile handicap.—Harry Gaddis, 1st; Ed. Borderwisch, 2d. Time, 5:43 3-5.

Two miles trial against record by Barney Oldfield.—Time, 2:39 2-5.

ATLANTIC CITY BEACH TESTED.

Special Correspondence.

ATLANTIC CITY, N. J., Aug. 26.—Those who feared that Atlantic City did not possess a beach broad enough or sufficiently firm for racing will be reassured by the statements of Secretary S. M. Butler, of the Automobile Club of America.

He was here on Friday and inspected the stretch of sand on the lower beach, as the guest of President Walter E. Edge, of the local Automobile Club.

The tide was low at the time, and five cars were run abreast at a fast clip, and the track stood the test splendidly. Mr.

Butler says the beach is everything claimed for it.

Unfortunately a number in this locality were misled by several articles in the papers, stating that the wheels of cars sunk in the sand. This report originated in an accident to a big car, the driver of which attempted to run it around one of the jetties that extends from the board walk. As the sand here was soft, he did what everyone who saw him expected he would—stuck. Two horses were required to pull him out, and the tale was spread, with elaborations.

BALTIMORE RACES IN DOUBT.

Special Correspondence.

BALTIMORE, Aug. 23.—It is more than probable that the race meet which was to have been held here on two days in September, and for which a sanction had been given the Automobile Club of Maryland by the American Automobile Association, will be called off as a result of the recent accidents to several of the prominent drivers, including Earl Kiser and Webb Jay, the latter of whom is well known here and had promised to be present on one of the days. Officials of the club are at present out of the city, but H. M. Rowe, a member of the publication committee, is authority for the statement that the meet will not be held.

In place of the track races an endurance contest for a fine trophy is probable, the car showing up best in a certain number of runs between Baltimore and surrounding places—such as Philadelphia, Washington, Atlantic City and others—receiving the prize and holding it until it is re-awarded in competition later.

PARADE AT SAVIN ROCK.

Decorated Cars Make Pretty Night Scene at Connecticut Resort.

Special Correspondence.

NEW HAVEN, CONN., Aug. 28.—Though twice hampered by most inclement weather, the first automobile carnival and parade ever held in this vicinity was successfully carried out at Savin Rock, the popular watering resort of New Haven, Saturday.

Both cottagers at the resort and street railway officials did everything possible to make the event a success, and thousands thronged the beach promenade and the gayly decorated thoroughfares, making a brilliant scene. Thousands of Japanese lanterns, electric lights and Roman candles threw a glamor over the affair which was indescribably charming. Five bands were in attendance, and hundreds of automobilists gathered from all over the state.

The feature of the carnival was the auto parade, which started at 9:15 at night, headed by an automobile decorated with American flags, carrying General Manager John C. Punderford, of the Consolidated Street Railway Company, Joseph Johnson and Samuel Goodwin, the committee of arrangements. As the long line of gayly decorated machines slowly moved up Beach street, to the music of the several bands, amid the boom of fireworks and clouds of confetti, multitudes of vari-colored bombs were discharged from the lawn of Hill's Homestead Hotel, illuminating the shore for miles.

With a Rambler touring car entirely covered by a most realistic representation of the Japanese cruiser *Fushima*, the first prize was awarded Samuel Campbell, of New Haven. Mr. Campbell's car was a marvel of the decorator's art, and elicited applause

wherever it appeared. The ship was over twenty feet long, and complete in all its appointments. Driven by Mr. Campbell, who acted as his own chauffeur, and directed by a pilot on the deck, the machine carried ten little boys dressed as Japanese sailors, adding greatly to the effectiveness of the display. The warship carried a number of dummy guns, several of which were fitted with shotguns, which at intervals discharged blank cartridges, to the delight of the small boys along the route. After the parade was over the *Fushima* collided with a carriage, smashing her bow and appearing as if she had been in contact with a Russian torpedo. Luckily no one was injured, and the accident in nowise marred the event.

The second prize went to Mrs. C. O. Reichert, who piloted a touring Oldsmobile decorated in pink and white flower effects. On a seat projecting over the front sat little Francis Reichert, driving three white doves with pink ribbons. Three young ladies gowned in white accompanied Mrs. Reichert in the car.

James McLay's auto took the third prize, a silver water pitcher, and was decorated in white crysanthemums with a bevy of pretty girls in white gowns. Alexander Scarra won the fourth prize with a car all pink, and bearing a great candelabrum with flowers in the center. With an auto decorated in pink crysanthemums with a latticework effect, Frederick Von Beren took the fifth prize. He was accompanied by his wife and little son.

The first comic prize was awarded William C. Decker, in whose car was a great face of *papier maché* that grinned and winked in a jovial manner. Accompanying it were five hoboes in all manner of rags and tatters. The auto truck of Alexander Scarra, on which ten little colored boys did a human ten-pin act, captured the second comic prize.

The parade followed a route along several miles of streets at the Rock, and was enthusiastically applauded. Messrs. George E. De Merriette and James T. Sullivan acted as judges and awarded the prizes to the satisfaction of all.

CHILDREN ENJOY AUTO RIDE.

Sight-seeing Companies Lend Cars for Use of City's Poor.

Special Correspondence.

WASHINGTON, D. C., Aug. 24.—Through the generosity of a number of the companies operating "sight-seeing" automobiles in this city, the Summer Outings Committee of the Associated Charities has been enabled to give an outing to a number of poor children of the city in the big sight-seeing automobiles.

Early in the week one of the big cars was sent down in the southwestern section of the city, where fifty little children were awaiting it. A trip around the city was then made, many of the tots for the first time seeing the interesting and historical places in Washington, including the White House, the government buildings, the famous statues, and residences occupied by the foreign ministers, all of which were pointed out and explained in detail by the guide who accompanied the car.

Later in the week a number of children in northeast Washington were given the novel experience of seeing Washington after dark in a big automobile, and to many of them the ride was most exciting.

These trips will be continued until the children in every section of the city shall have been given an automobile ride.



CHICAGO CLUB'S OUTING.

Week End Run to South Bend, Ind., Is Largely Attended—Other News.

Special Correspondence.

CHICAGO, Aug. 26.—A Chicago Automobile Club run was made to South Bend, Ind., on Saturday, in which twenty machines, carrying 100 persons, participated. The procession started from the club house at 9 o'clock in the morning, and stopped for luncheon in a beautiful grove in picnic style. At South Bend, which was reached late in the afternoon, the party stopped at the Hotel Oliver, and returned to Chicago Sunday morning. It is proposed to hold several of these short runs during the season, going to a different place each time, in order that the autoists may become acquainted with the various roads in the vicinity of Chicago.

One of Chicago's most progressive suburbs, Austin, is going to have an automobile club in the near future. The movement has been started by several of the suburb's most prominent enthusiasts, led by ex-Alderman Francis. It is Mr. Francis' idea to organize automobile clubs in all of the suburbs, and then have them unite in an organized fight for uniform speed and other regulations for the general good. As it is at present, each village has its own specific laws and ordinances, which differ radically from each other, and which tend to make automobilizing less of a pleasure than it should be.

It has been decided to abandon the idea of a race meet in Chicago this Fall, the recent accidents to prominent drivers having led the members of the racing board of the Chicago A. C. to this decision. The chairman of the board, L. E. Meyers, took the matter of calling off the meet into his own hands, and secured the consent of the directors for the action. Mr. Meyers said that although the meet was called off that there was a possibility of having a matinee races for the members of the club exclusively.

ORPHANS' OUTINGS PROPOSED

Columbus Auto Club Figuring on Monthly Trips for Poor and Orphaned.

Special Correspondence.

COLUMBUS, Aug. 24.—The Columbus Automobile Club, at its next meeting, will consider a proposition by Dr. C. A. Howell, the secretary, that the club hold outings for the orphaned and poor children of the city. The plan contemplates the use of cars one day a month donated by the automobile owner, and the object is to take the little ones from the alleys and crowded and sweltering streets for a glimpse of country life, a breath of fresh, pure air, and a romp amid the flowers in the woods.

"I have read with interest of this plan having been carried out elsewhere," said Dr. Howell, "and I sincerely approve it."

"There are hundreds of little children in Columbus who would be incalculably benefited by such outings, and I believe that the majority of the members, if not all of them, would agree to set apart one day a month for such trips. These outings would be especially enjoyable during the nutting season."

There is a movement on foot to repeal

the vehicle tax ordinance passed by the city council last spring, which taxes automobiles and vehicles of all kinds. It is decidedly unpopular, and those affected by it declare it unjust. But one vote is needed to knock it out. The city has expended several hundred dollars in issuing license tags, and will be "out" financially if the measure is repealed.

MILWAUKEE CLUB MEETING

Incorporation Papers Signed.—Name Not Changed.—Will Give Orphans Outing.

MILWAUKEE, Wis., Aug. 24.—Plans for the outing which the Milwaukee Automobile Club will give the orphans of the several orphan asylums of this city were discussed last night at a regular club meeting held in the Hotel Pfister. The date for the outing has not yet been fixed, but it will probably be held next week.

After having considered the proposition of forming a corporation, without capital stock, in order to place the organization on a sound basis and to give it proper legal standing, the club last night signed articles of incorporation. The change in the name of the club to the Automobile Club of Wisconsin was not made, it having been decided to retain its present name. Permanent headquarters are to be secured in the near future, and several buildings are now being considered with this end in view.

TOLEDO COUNTRY CLUB.

Company to Purchase Site Near City and Build a Clubhouse and Driveway.

Special Correspondence.

TOLEDO, O., Aug. 24.—If the plans of a number of public-minded citizens of this city do not miscarry, Toledo will have one of the most unique as well as most commodious clubhouses in the West. A company is now being formed for the purpose of purchasing a tract of 207 acres of land twelve miles south of the city on which to erect an automobile clubhouse.

This land includes the battlefield of the famous Battle of the Fallen Timbers, and also the site of the even more famous "Turkey Foot" rock, which is so closely identified with Indian movements in northern Ohio and southern Michigan. For a number of years the Maumee Valley Pioneer's Association has been importuning the national government to purchase the ground for memorial purposes, but without effect.

While definite plans have not yet been decided upon, the company expects to erect a \$50,000 club building, and also construct a three-mile automobile track. This track, however, will be more in the nature of a drive or speedway; it will be from 100 to 200 feet wide, and will not be used for races.

The autoist from Indianapolis, who was arrested in Zionville for speeding, couldn't have been going very fast to be overhauled by a constable. It is not of record that any constable ever worked himself up to a speed of twenty miles an hour, except in a few cases where the pursued had the money in his pocket and had refused to pay the costs.—*Lafayette (Ind.) Journal.*

WINTON WILL OPEN CANADIAN BRANCH.

Toronto Selected for Location of Salesroom and Garage—Interest Developing in Commercial Vehicles in Canadian Business Circles—Dispute About Use of Name of Rambler.

Special Correspondence.

TORONTO, CANADA, Aug. 27.—The Winton Motor Carriage Co., of Cleveland, will open its first Canadian branch in Toronto. It has purchased for about \$30,000 a lot on the southeast corner of Richmond and Victoria streets, on which it will erect a three-story sales headquarters and garage. The plans for the building are completed, and work on it will be started about September 1. The Canadian agency for the Winton was first held by the Canada Cycle and Motor Company, and afterwards by the Automobile and Supply Company, both of Toronto. The machine has been very popular here, and it is probably on that account that the company has decided to establish a separate branch.

Business men in Canada are beginning to give practical attention to the commercial automobile. Recently J. J. Main, manager of the Polson Iron Works, Toronto, purchased a Packard motor truck from the Canada Cycle and Motor Company. He has since had the machine thoroughly tested out with heavy loads, with results highly satisfactory, both from the standpoint of economy and the amount of work done. It is understood that Mr. Main has some special purpose in view, involving the organization of a joint stock company to utilize a number of motor trucks, but he has not announced this as yet.

The Canada Cycle and Motor Company has brought a second Packard truck to Toronto, with the expectation of selling it this season. Three Knox motor trucks have been sold in Toronto by the Automobile and Supply Company, and it is understood additional orders for these machines are pending.

The Canada Cycle and Motor Company and the National Cycle and Auto Company have issued a writ against Thomas B. Jeffries, of Kenosha, Wis., and the Automobile and Supply Company, of Toronto, to obtain an order restraining the defendants from importing into Canada or selling or disposing of motor vehicles or motors named "Rambler." They ask also for an account to be taken of the number of "Rambler" vehicles in Canada.

The Canada Cycle and Motor Company was originally an amalgamation of a number of bicycle companies, including the National Cycle and Auto Company. It is claimed that this company secured patent rights for Canada covering the name "Rambler" as applied to bicycles and automobiles, and also handled the "Rambler" bicycles made by the American Bicycle Company. The Canada Cycle and Motor Company is at present manufacturing a bicycle by the name of "Rambler," and through its title acquired from the National Cycle and Auto Company claims exclusive ownership in Canada of the name "Rambler."

The Canadian Bank of Commerce, Toronto, is using an electric runabout for carrying the daily supply of cash from the head office to the different city branches. Stored in a special compartment of the car is frequently from \$35,000 to \$50,000 in bills, silver and copper. Joseph Gregory, a messenger, who has been in the employ of the bank for eighteen years, drives the machine, and he is accompanied by Isaac Mowat, another employee. Each is armed.

Formerly the work of delivering was accomplished by the use of a horse. Gregory says he makes the trip in less than an hour, while with the horse it used to take an hour and a half. In addition to delivering the supply to the branch bank, the auto is used to take the parcels of checks to the clearing house. In the courtyard of the head office a charging station has been installed, so that the machine may be in constant readiness for service.

OMAHA DEALERS PROSPEROUS

New Garages Building and Business Rapidly Growing.

Special Correspondence.

OMAHA, Neb., Aug. 24.—Omaha, the Gate City of the West, is at present enjoying an unprecedented era of prosperity along all lines, not the least of which is the automobile industry. With the city's boulevard system, being improved continually, the horseless vehicle is coming into greater popularity and demand with notable activity.

The Powell Automobile Co. recently changed the firm name to the Powell-Bacon Co., and this concern now occupies a model garage and salesroom. The new location is at No. 2024 Farnam street, and is located

er of Johns Hopkins University; the Peabody Institute, the principal clubs, Washington Monument and other places of interest historically and otherwise. Two hours are consumed in making the regular tour.

RECENT INCORPORATIONS.

The Gurnsey Belmont Motor Transit Company, Fairview, O.; capital, \$10,000. Directors: D. E. Morris, Fred Johnson and J. W. Acton.

Chattanooga Automobile Company, Chattanooga, Tenn.; capital, \$10,000. Incorporators: Charles Forstner, J. C. Forstner, W. S. White, J. L. Foust and A. S. Dickey.

Stover Automobile Company, Freeport, Ill.; capital, \$50,000. President, D. C. Stover; vice-president, W. A. Hance; secretary, P. S. Stover; treasurer, J. F. Smith.

Nashville Motor Car Company, Nashville, Tenn.; capital, \$10,000. Incorporators: Dr. Charles Brower, E. A. Lindsey, J. W. Handley, D. R. Dorris, E. C. Andrews and M. S. Pilcher.

The Holmes & Childs Motor Company, Camden; capital, \$25,000. Incorporators: William H. Childs, Frank C. Holmes, H. A. Rantz, John H. McCormick, Wilfrid B. Wolcott.

Automobile Hire & Sales Company, New York; capital, \$10,000 manufacture and sell



NEW GARAGE OF THE POWELL-BACON COMPANY ON FARNAM STREET, OMAHA.

on the main thoroughfare leading from the business to the residence portions of the city. The company is agent for the Oldsmobile, White steamer, Winton, Locomobile and Woods & Baker electric automobiles.

R. R. Kimball, another local dealer, is erecting a large garage and salesroom just east of the Powell-Bacon Company. The Kimball building will cost about \$40,000, and is now nearing completion.

At Eighteenth and Farnam streets The J. J. Deright Automobile and Safe Company will erect a three-story building for their increasing business. The Deright Company has branch houses at Kansas City and Minneapolis.

"SEEING BALTIMORE" INAUGURATED.

Special Correspondence.

BALTIMORE, Aug. 24.—The first "Seeing Baltimore" automobile appeared on the city's streets a few days ago, and attracted a great deal of attention all along its route. The vehicle is a Packard, seating sixteen persons, and is operated by the Automobile Outing Company, which some time ago inaugurated a service in Druid Hill Park.

The route of the sight-seeing automobile takes in the rehabilitated burnt district, the home of the late Johns Hopkins, found-

automobiles. Incorporators: George A. Wingate, Arthur L. Hurley and A. Berton Reed, all of No. 20 Nassau street, New York.

The Alaska Automobile Transportation Company, Olympia; capital, \$300,000; to engage in the operation of automobiles from Nome, on Bering Sea, to Solomon City, a distance of thirty-two miles, and to other points.

North Jersey Automobile Club, registered office, Paterson; agent in charge, Frank Van Cleve. Trustees: George A. Post, Frank R. Reynolds William G. Norwood, Christopher Horandt, Fred A. Baer, Frank Van Cleve. The club is to maintain a social organization for owners of automobiles.

The White Vanderbilt cup racer is not yet completed, but it will probably be assembled and tried out on the roads some time within the next two weeks. Walter White, who has charge of the developing of the machine, is in somewhat of a quandary as to where the car can be tried out around Cleveland. It is not known who will drive it in the race. Mr. White has been overwhelmed with applications, but as none of the applicants is familiar with the handling of a steam car it is probable that some of the factory employees will be permitted to handle it.

INFORMATION FOR BUYERS.

AUTO STRAPPING.—All sorts of strapping for auto uses is now carried by H. W. Sanborn, of Dover, N. H., who has been furnishing straps for many years to a number of large makers of high-grade carriages. The use of the best grade of oak tanned leather and metal trimmings from the best factories enables him to give his own guarantee of satisfaction.

FOUR-WHEEL-DRIVE CAR.—An automobile which has a four-wheel drive from a single gasoline motor, has no steering knuckles, and has solid, one-piece axles front and rear, is being manufactured by the Twyford Motorcar Co., of Brookville, Pa. In this car the motor drives both front and rear axles through shaft and bevel gears running in oil; the front axle swivels bodily for steering. The manufacturers state that the compensating devices are such that each wheel may be running at a different rate of speed from the others without any strain or dragging. Brakes are applied simultaneously to all four wheels. The speed-changing gear gives two forward speeds and one reverse. A number of styles are listed, from an 8-horsepower runabout to a tonneau car which may have 18-horsepower or more.

SMALL SPRINGS.—The Wallace Barnes Co., of Bristol, Conn., makes a specialty of manufacturing small springs of every description, and issues a catalogue which is illustrated with a great variety of springs of almost every conceivable form. The large amount of spring work done by this concern makes it necessary to handle large quantities of steel, and all forms of steel for springs and similar work are carried in stock.

UNIVERSAL AUTOMATIC CARBURETER.—The idea of producing a carbureter in which changes of road level would have no effect on the height of the gasoline in the spraying nozzle has been carried out by the Speed Changing Pulley Co., of Indianapolis, Ind.,

in its new automatic carbureter. The float, which is of cork, has an opening in the center through which the needle valve passes, and the top of the float is hollowed to make room for the mixing chamber, which drops sufficiently to permit the gasoline to rise to the desired height in the spraying nozzle. A suction-operated compensating air valve controls the air supply, admitting air in proportion to the amount of gasoline used, the spring tending to hold down the air valve being adjustable. A throttle is incorporated in the carbureter, and is so constructed that it may, if desired, be attached to the air inlet, thus making the carbureter work in the opposite direction. As the carbureter is symmetrical in construction, this makes no difference in its functioning.

SHIPPING AUTOMOBILES.—The trouble and loss of time attendant upon shipping an automobile abroad is naturally very distasteful to the average automobilist who wants to go to Europe and take his car along. To relieve him of this nuisance the Stone & Downer Co., No. 131 State street, Boston, Mass., has arrangements enabling it to take entire charge of automobile shipments, so that the owner is not called upon to do anything but receive his car when he gets to the other side. Crating and all necessary freight, customs and other details are attended to by representatives of the firm at both ends of the journey. Shipments are made via Boston exclusively, as, it is stated, that port presents more favorable conditions for such work.

NEW TRADE PUBLICATIONS.

Thompson Auto Co., Olneyville Square, Providence, R. I.—Circular and illustrations of steam wagonettes for ten passengers.

Waltham Mfg. Co., Waltham, Mass.—Booklet giving instructions for the care and

operation of the Orient motor buckboard. The information is applicable to any vehicle driven by a small air-cooled motor, so far as the general principles are concerned.

Beckley-Ralston Co., 178 Lake street, Chicago.—A 96-page catalogue and price list of automobile small parts, fittings, supplies and tools; fully illustrated.

Hyatt Roller Bearing Co., Harrison, N. J.—Bulletin No. 126, describing the application of Hyatt roller bearings to a "rolling road" or moving road built to carry vehicles and horses up a steep hill in Cleveland, O.

Moran Flexible Joint Co., Inc., Louisville, Ky.—Catalogue of Moran flexible joints, which are made entirely of metal and are of the ball-and-socket type; made for use with steam, air or liquids.

G. & J. Tire Co., Indianapolis, Ind.—Booklet giving the opinions of a number of users of G. & J. tires. The booklet is attractively gotten up, and the letters, which are fac-similes of the originals, are exceedingly complimentary.

Post & Lester Co., Hartford, Conn.—Bulletin No. 40, describing spark plugs, acetylene lamps and generators, automobile clocks, horns, tire cases and linen dusters.

Smith Automobile Co., Topeka, Kan.—Booklet, very attractively prepared, describing the growth of the firm and telling how it started automobile building; also illustrations of the Smith cars.

C. T. Ham Mfg. Co., Rochester, N. Y.—A catalogue of the line of Ham automobile side and tail lamps and headlights. The front and back covers are printed with a halftone reproduction of the front and back of a Ham side lamp and the booklet is cut with a die along the outline of the lamp. On the irregular inner pages thus formed are engravings and descriptions of the various lamps.

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SPECIAL NOTICES

Advertisements inserted under this heading at 20 cents per line; about 7 words make a line. Remittance should accompany copy. Replies forwarded if postage is furnished.

FOLJAMBE AUTOMOBILE SCHOOL—Day or evening courses in automobile mechanism; care, repair, operation and brake tests of horsepower; also mechanical drafting and gas engine design. Classes begin September 20, 1905. E. S. Foljambe, B.S., M.E., Director, 66-68-70 Stanhope St., Boston, Mass. Circulars sent on application. Sept14

A TEN-PASSENGER WAGONETTE; sample car; 1905-6 model; steam; price and description on application. Thompson Auto Co., Olneyville, Sq., Providence, R. I. t.f.

A SPLENDID OPPORTUNITY for hotel and livery. Two 2-seated and two 3-seated brakes and one 16-passenger bus, all electric, will be sold at low prices and easy terms. Standard construction, practically new, and in first-class condition every way, including batteries; run but very little. Send for photos and prices. S. F. Bancroft, 1400 Michigan Ave., Chicago, Ill. t.f.

BARGAIN for sale, one set of Gwinchard solid tires, 28x3, good as new, driven only a few miles. E. C. Bertels, 508 Carey Ave., Wilkes-Barre, Pa. Sept7

CHAUFFEUR: technically educated and practically experienced young man desires high-class position as chauffeur to private party; careful, licensed driver; no repair graft, and one who strictly upholds his employer's interests. Address, Throttle, care The Automobile. Aug31

ELEGANT 1904 Autocar, exactly like 1905 model; almost new, used less than two months. Owner needs money and will sell at a sacrifice. Manhattan Storage Co., 334-340 W. 44th St., New York City.

FOR SALE—Rebuilt 1904 Olds tonneau with 20-h.p. double opposed engine. Sarta Iron Works Co., Sarta, Wjs. Sept7

FOR SALE—1904 Franklin Tonneau; \$900. Franklin Runabout; \$800; like new. Chauncey D. Hakes, Albany, N. Y. Sept7

FOR SALE—One 16-h. p. automobile; run about 200 miles; it is in excellent condition. E. L. Juniper, Nelsonville, O. Aug. 31.

FOR SALE—One set of Hartford clincher tires, 36x4; never been used; have no use for them; name your own price. P. O. Box O, Columbus, O. Sept7

FOR SALE—1904 Orient buckboard, 1905 springs; perfect condition; first check for \$190 takes it. R. J. Huntzinger, Hotel Morton, Berwick, Penna. Aug31

FOR SALE—1905 Peerless, 35-h.p., Rushmore lamps, cape top, Continental tires; driven 1,000 miles; first check for \$3,500. H. D. Church, Newton Centre, Mass. Sept7

FOR SALE—Rambler 1904 Model L, 16-h.p., with top, glass front, side baskets, lamps, etc.; in good running condition. F. N. Temple, 921 Armory Ave., Cincinnati, O. Aug31

FOR SALE—1905 model G Yale automobile, built by the Kirk Mfg. Co., Toledo, O., delivered to me in May; has not been run 200 miles; will sell cheap. E. S. Hobbs, Aurora, Ill. Aug31

FOR SALE—Knox Tudor touring car, full 1905 improvements and touring equipment. Top, side baskets, three gas headlights, Rushmore generator, extra tires and parts; guaranteed perfect condition; for demonstration and further particulars address Harry B. Haines, care Evening News, Paterson, N. J. Aug31

FOR SALE—10-h.p. Grout steamer, drop front, perfect condition; cost \$1,200; will carry four anywhere; new 30x3 Diamond tires; will sell reasonable to settle an estate. Address, K., care The Automobile. Sept7

FOR SALE—1905 Winton Model C demonstrating car and extras, \$1,300; 20-h.p. Haynes-Apperson, \$650, cost \$2,000; 8-h.p. Pierce Stanhope, \$550; 1903 Oldsmobile, \$300. All in fine condition. A. C. Pollard, Nashua, N. H. Aug31

FOR SALE—One 1905 Autocar, 12-h.p., tonneau car, new from factory two weeks ago; full equipment, lamps, horn, etc.; guaranteed in perfect condition; cost \$1,480; am moving to California; \$1,225 takes it. Dr. F. R. Weston, LaCrosse, Wis. Aug31

FOR SALE—1904 White touring car. This car has been carefully run by the owner, and is equipped with numerous extras, including auxiliary steam pump, bullet lamps, etc. It is in perfect condition, three of tires are new; price \$1,000. Write to Spencer Borden, Jr., P. O. Box 1, Fall River, Mass. Sept7

FOR SALE—1904 Locomobile, 24-h.p., cape top, Hartford shock absorbers; car in first-class condition, fully equipped for touring. J. O. Norcross, 214 Summer St., Worcester, Mass. Aug31

FOR SALE—Up-to-date 15-horsepower Panhard, with new side door body by Kimball, new Capetown top, new Krebs carburetor; latest steering gear; machinery thoroughly overhauled and in A1 condition; car newly painted and ready for use; equipped for touring; as good as new, fine appearance and high class in every way. Address J. J. Scott, 7 Monroe St., Chicago, Ill. t.f.

FOR SALE—Locomobile steamer, perfect condition, \$175; 2 Model E Ramblers, good condition, \$225-\$300; 2 12-h.p. double cylinder Elmore, detachable tonneau seats, \$250-\$450; 1 machine with 7-h.p. Oldsmobile engine, great bargain, \$125; 20-h.p. Phelps, 3 cylinders, \$500; Model E Rambler with wheel steering, run less than 150 miles, \$425; 1903 Winton, 20-h.p., with tonneau, \$900; Ford runabout, 10-h.p., \$375. E. S. Youse, Reading, Pa. Sept14

FOR SALE—Packard Model L in fine condition, \$1,750; White 1905 Model, with headlights and cape top, used slightly for demonstrating, \$1,700; 1904 Autocar, wheel steer, searchlight and baskets, almost as good as new, \$750; four-cylinder 1904 Locomobile with canopy top and headlights, first-class order, \$1,200. The above constitute our entire stock of used cars, and are offered at bargain prices in order to close at once. Pardee-Ullman Co., 1220 Michigan Ave., Chicago. Sept7

GUARANTEED shop-worn and second-hand cars at bargain prices. Knox runabouts and touring cars, \$450 to \$1,000; 1904 Stevens-Duryeas, \$550 up; Oldsmobiles, \$175 up; Cadillac, \$250 up; Ford touring car, \$500. N. Y. Automobile Exchange, 81 Warren St., New York. Sept7

HARTFORD DUNLOP tires, latest improved type, 30x3 1-2 inches; four slightly used and two perfectly new shoes; \$115 buys the lot. H. B. Dougherty, Binghamton, N. Y. Aug31

KINGSTON CARBURETERS, 1905 model 1-in. inlet, absolutely new, \$475 each; cash with order. Holley Brothers Co., 661-673 Beaubien St., Detroit, Mich. t.f.

POWER INCREASES twenty per cent. timing 4-cycle valves to my diagrams. Testimonials from renowned builders. Copyrighted diagrams \$1. Mobile-King, 162 Davis, Bradford, Pa. Aug31